Safety Data Sheet
Nimuden NPR-4-B

SDS Revision Date: **11/11/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Nimuden NPR-4-B
Alternate Names	Chemical Family: Aqueous solution containing inorganic and organic compounds., MSDS Code : 43-0002

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

No applicable GHS categories.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

No applicable GHS categories.

[Prevention]:

No GHS prevention statements

[Response]:

No GHS response statements

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Sodium phosphinate **CAS Number: 0007681-53-0**	**25 - 50**		**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact. See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water ways.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Persons performing the clean-up work should wear personal protective clothing and equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatible materials: No data available.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007681-53-0	Sodium phosphinate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007681-53-0	Sodium phosphinate	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless to light yellow Liquid
Odor	None
Odor threshold	Not Measured
pH	6-7
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100C
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.26
Solubility in Water	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Sodium phosphinate - (7681-53-0)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium phosphinate - (7681-53-0)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

15. Regulatory information

Regulatory Overview	The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.
Toxic Substance Control Act (TSCA)	All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification Not Regulated

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): No
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
(No Product Ingredients Listed)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%) :
(No Product Ingredients Listed)

Penn RTK Substances (>1%) :
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Nimuden NPR-4-C

SDS Revision Date: **06/19/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Nimuden NPR-4-C
Alternate Names	Chemical family: Aqueous solution containing sodium hydroxide MSDS Code: 43-0003

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Acute Tox. 4;H312	Harmful in contact with skin.
Skin Corr. 1A;H314	Causes severe skin burns and eye damage.
Eye Dam. 1;H318	Causes serious eye damage.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H312 Harmful in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.

[Prevention]:

P260 Do not breathe mist / vapors / spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P302+352 IF ON SKIN: Wash with plenty of soap and water.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P322 Specific measures (see information on this label).

P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P363 Wash contaminated clothing before reuse.

[Storage]:

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Sodium hydroxide **CAS Number: 0001310-73-2**	**10 - 25**	**Skin Corr. 1A;H314** **Acute Tox. 4;H312**	**[1][2]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General
Move victim to fresh air.
Call 911 or emergency medical service if deemed necessary.
Give artificial respiration if victim is not breathing.
Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Administer oxygen if breathing is difficult.
Remove and isolate contaminated clothing and shoes.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
For minor skin contact, avoid spreading material on unaffected skin.
Keep victim warm and quiet.
Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Inhalation
Corrosive and irritating to upper respiratory tract and mucous membranes. Remove affected person to fresh air; wash mouth and nasal passages with water repeatedly; if breathing difficulties persist, seek medical attention

Eyes
Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin
In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion
Drink large quantities of water or milk; give diluted vinegar or lemon juice to conscious person; DO NOT induce vomiting; seek medical attention immediately.

4.2. Most important symptoms and effects, both acute and delayed

Overview	EFFECTS OF OVEREXPOSURE: SKIN: Will cause severe irritation, redness, and, if untreated, can result in deep chemical burns. EYES: Corrosive to eyes resulting in irritation, reddening, chemical burns, and, if untreated, possibly permanent blindness. INGESTION: Will causes burns of the mucous membranes in the mouth, throat, esophagus, stomach, and can result in possible death. INHALATION: Airborne concentrations of dusts or mists will cause damage to the upper respiratory tract and lungs, which may result in chemical pneumonia. See section 2 for further details.
Eyes	Causes serious eye damage.
Skin	Harmful in contact with skin. Causes severe skin burns and eye damage.

5. Fire-fighting measures

5.1. Extinguishing media

Use media appropriate for surrounding area.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: High temperatures and fires may produce such toxic oxides as those of carbon sodium and potassium. At temperatures above 1562F, this product may react with air and reducing sugars (fructose, galactose, arabinose, levulose, lactose, and maltose) in foods or dry whey solids to form toxic carbon monoxide. (The reaction will also occur at lower temperatures, but more slowly.) When a confined space entry must be made, even into an empty tank, be sure to follow all appropriate confined entry procedures (ANSI Z117.1).

Do not breathe mist / vapors / spray.

5.3. Advice for fire-fighters

Wear positive pressure self-contained breathing apparatus (SCBA).
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
Contact with metals may evolve flammable hydrogen gas.
Containers may explode when heated.

TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death.
Contact with molten substance may cause severe burns to skin and eyes.
Avoid any skin contact.
Effects of contact or inhalation may be delayed.
Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Stop leak if you can do it without risk.
Prevent entry into waterways, sewers, basements or confined areas.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
DO NOT GET WATER INSIDE CONTAINERS.
6.2. Environmental precautions
Do not allow spills to enter drains or watercourses.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
6.3. Methods and material for containment and cleaning up
Keep unauthorized personnel away.
Stay upwind.
Keep out of low areas.
Ventilate enclosed areas.
Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling
Avoid storing next to strong acids. If product is added too rapidly, or without stirring it may become concentrated at the bottom of mixing vessel; excessive heat may be generated, resulting in dangerous boiling and splattering, and a possibly an immediate and violent reaction.
See section 2 for further details. - [Prevention]:
7.2. Conditions for safe storage, including any incompatibilities
Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: May react with water, acids, metals and reducing sugars (fructose). Avoid contact with "soft" metals such as magnesium, zinc and aluminum
See section 2 for further details. - [Storage]:
7.3. Specific end use(s)
No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0001310-73-2	Sodium hydroxide	OSHA	TWA 2 mg/m3
		ACGIH	Ceiling: 2 mg/m3
		NIOSH	C 2 mg/m3
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0001310-73-2	Sodium hydroxide	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.

Eyes Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.

Skin Chemical resistant clothing such as coveralls/apron boots should be worn. Emergency eyewash station should be in close proximity. Chemical Impervious Gloves

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Transparent, yellowish Liquid
Odor	None
Odor threshold	Not Measured
pH	13
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100C
Flash Point	Not Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.13
Solubility in Water	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

May react with water, acids, metals and reducing sugars (fructose). Avoid contact with "soft" metals such as magnesium, zinc and aluminum.

10.6. Hazardous decomposition products

High temperatures and fires may produce such toxic oxides as those of carbon sodium and potassium. At temperatures above 1562F, this product may react with air and reducing sugars (fructose, galactose, arabinose, levulose, lactose, and maltose) in foods or dry whey solids to form toxic carbon monoxide. (The reaction will also occur at lower temperatures, but more slowly.) When a confined space entry must be made, even into an empty tank, be sure to follow all appropriate confined entry procedures (ANSI Z117.1).

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Sodium hydroxide - (1310-73-2)	6,600.00, Mouse - Category: NA	1,350.00, Rabbit - Category: 4	600.00, Mouse - Category: NA	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	4	Harmful in contact with skin.
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	1A	Causes severe skin burns and eye damage.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity
No additional information provided for this product. See Section 3 for chemical specific data.
Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium hydroxide - (1310-73-2)	196.00, Poecilia reticulata	40.38, Ceriodaphnia dubia	Not Available

12.2. Persistence and degradability
There is no data available on the preparation itself.
12.3. Bioaccumulative potential
Not Measured
12.4. Mobility in soil
No data available.
12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.
12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN1824	UN1824	UN1824
14.2. UN proper shipping name	UN1824, Sodium hydroxide solution, 8, II	Sodium hydroxide solution	Sodium hydroxide solution
14.3. Transport hazard class(es)	**DOT Hazard Class:** 8 **DOT Label:** 8	**IMDG:** 8 **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	II	II	II

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification D2B E

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs (lbs):

Sodium hydroxide (1,000.00)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):

Acetic acid, lead(2+) salt

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Sodium hydroxide

Penn RTK Substances (>1%):

Sodium hydroxide

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Nimuden NPR-4-M

SDS Revision Date: **11/11/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity Nimuden NPR-4-M

Alternate Names Chemical family: Aqueous solution containing organic and inorganic compounds, MSDS Code: 43-0004

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use See Technical Data Sheet.

Application Method See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name Uyemura International Corporation

3990 Concours, Suite 425 Ontario, CA 91764

240 Town Line Road Southington, CT 06489

Emergency

24 hour Emergency Telephone No. 24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.

Customer Service: Uyemura International Corporation CA: 909-466-5635, CT: 860-793-4011
Number for non-emergency questions concerning MSDS (860) 793-4011
Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Eye Irrit. 2;H319 Causes serious eye irritation.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Warning

H319 Causes serious eye irritation.

[Prevention]:

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P337+313 If eye irritation persists: Get medical advice / attention.

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Sodium phosphinate **CAS Number: 0007681-53-0**	**25 - 50**		**[1]**
Succinic acid **CAS Number: 0000110-15-6**	**10 - 25**	**Eye Irrit. 2;H319**	**[1]**
Ammonium lactate **CAS Number: 0000515-98-0**	**10 - 25**		**[1]**
Glutamic acid, monosodium salt **CAS Number: 0000142-47-2**	**1.0 - 10**		**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact.
See section 2 for further details.

Eyes Causes serious eye irritation.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water ways.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Persons performing the clean-up work should wear personal protective clothing and equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatible materials: No data available.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000110-15-6	Succinic acid	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0000142-47-2	Glutamic acid, monosodium salt	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0000515-98-0	Ammonium lactate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0007681-53-0	Sodium phosphinate	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000110-15-6	Succinic acid	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000142-47-2	Glutamic acid, monosodium salt	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000515-98-0	Ammonium lactate	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007681-53-0	Sodium phosphinate	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless to light yellow Liquid
Odor	None
Odor threshold	Not Measured
pH	5-6
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100 C
Flash Point	Non-Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.19
Solubility in Water	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Sodium phosphinate - (7681-53-0)	No data available	No data available	No data available	No data available	No data available
Succinic acid - (110-15-6)	No data available	No data available	No data available	No data available	No data available
Ammonium lactate - (515-98-0)	No data available	No data available	No data available	No data available	No data available
Glutamic acid, monosodium salt - (142-47-2)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	2	Causes serious eye irritation.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium phosphinate - (7681-53-0)	Not Available	Not Available	Not Available
Succinic acid - (110-15-6)	Not Available	Not Available	Not Available
Ammonium lactate - (515-98-0)	Not Available	Not Available	Not Available
Glutamic acid, monosodium salt - (142-47-2)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Observe all federal, state and local regulations when disposing of this substance.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable

14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented.

Toxic Substance Control Act (TSCA) All components of this material are either listed or exempt from listing on the TSCA Inventory.

WHMIS Classification D2B

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
(No Product Ingredients Listed)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):

Acetic acid, lead(2+) salt

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%) :
(No Product Ingredients Listed)

Penn RTK Substances (>1%) :
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H318 Causes serious eye damage.

H319 Causes serious eye irritation.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Nimuden NPR-4D

SDS Revision Date: **07/01/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Nimuden NPR-4D
Alternate Names	Chemical family: Aqueous solution containing inorganic salts MSDS Code: 43-0005

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture
No applicable GHS categories.

2.2. Label elements
Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows:
No applicable GHS categories.

[Prevention]:
No GHS prevention statements
[Response]:
No GHS response statements
[Storage]:
No GHS storage statements
[Disposal]:
No GHS disposal statements

3. Composition/information on ingredients

There are no ingredients in this product which are classified as hazardous.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact.
See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: None

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Persons performing the clean-up work should wear personal protective clothing and equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Contain, dilute cautiously with water, and neutralize with soda ash or lime.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: None
See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

There are no ingredients in this product which are classified as hazardous.

8.2. Exposure controls

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Emergency eyewash station should be in close proximity. Chemical Impervious Gloves

Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless Liquid
Odor	None
Odor threshold	Not Measured
pH	2-3
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100C
Flash Point	Non-Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.00
Solubility in Water	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.
10.2. Chemical stability
Stable under normal circumstances.
10.3. Possibility of hazardous reactions
No data available.
10.4. Conditions to avoid
None known
10.5. Incompatible materials
No data available.
10.6. Hazardous decomposition products
None under normal use

11. Toxicological information

Acute toxicity
There are no ingredients in this product which are classified as hazardous.

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity
No additional information provided for this product. See Section 3 for chemical specific data.
Aquatic Ecotoxicity
There are no ingredients in this product which are classified as hazardous.
12.2. Persistence and degradability
There is no data available on the preparation itself.
12.3. Bioaccumulative potential
Not Measured
12.4. Mobility in soil
No data available.
12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.
12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Applicable	Not Applicable
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification E

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): No
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
(No Product Ingredients Listed)

EPCRA 302 Extremely Hazardous:
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):
Formaldehyde

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):
(No Product Ingredients Listed)

Penn RTK Substances (>1%):
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is: [NOT APPLICABLE]

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.

The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Nimuden NPR-4-A

SDS Revision Date: **08/26/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Nimuden NPR-4-A (20 liter packaging)
Alternate Names	Chemical Family: nickel salt. MSDS Code : 43-0001

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Acute Tox. 4;H302	Harmful if swallowed.
Acute Tox. 4;H332	Harmful if inhaled.
Skin Irrit. 2;H315	Causes skin irritation.
Skin Sens. 1;H317	May cause an allergic skin reaction.
Resp. Sens. 1;H334	May cause allergy or asthma symptoms of breathing difficulties if inhaled.
Muta. 2;H341	Suspected of causing genetic defects.
Carc. 1A;H350i	May cause cancer by inhalation.
Repr. 1B;H360D	May damage the unborn child.
STOT RE 1;H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 1;H410	Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H332 Harmful if inhaled.
H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H360D May damage the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

[Prevention]:

P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust / fume / gas / mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+310 IF SWALLOWED: Immediately call a POISON CENTER or doctor / physician.
P302+352 IF ON SKIN: Wash with plenty of soap and water.
P304+312 IF INHALED: Call a POISON CENTER or doctor / physician if you feel unwell.
P308+313 IF exposed or concerned: Get medical advice / attention.
P314 Get Medical advice / attention if you feel unwell.

P321 Specific treatment (see information on this label).
P331 Do NOT induce vomiting.
P333+313 If skin irritation or a rash occurs: Get medical advice / attention.
P340 Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P341 If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.
P342+311 If experiencing respiratory symptoms: Call a POISON CENTER or doctor / physician.
P362 Take off contaminated clothing and wash before reuse.
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.
[Storage]:

P405 Store locked up.
[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Nickel sulfate. **CAS Number: 0007786-81-4**	**25 - 50**	**Carc. 1A;H350i** **Muta. 2;H341** **Repr. 1B;H360D** **STOT RE 1;H372** **Acute tox. 4;H332** **Acute tox. 4;H302** **Skin Irrit. 2;H315** **Resp. Sens. 1;H334** **Skin Sens. 1;H317** **Aquatic Acute 1;H400** **Aquatic Chronic 1;H410**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation	Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.
Eyes	Get medical attention immediately. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Protect unharmed eye. Call ambulance (cue: caustic burn of the eyes). Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Continue rinsing until medical attention can be obtained. Immediate further treatment in ophthalmic hospital/ophthalmologist.
Skin	In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.
Ingestion	If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview	**Effects of Single Acute Overexposure:** Skin contact can cause allergic reaction (Nickel itch). Nickel itself is not toxic if swallowed, but its soluble salts are toxic, and if swallowed may cause giddiness and severe nausea. A physician should be contacted immediately if anyone develops any signs or symptoms and suspects they are caused by an exposure to soluble nickel compounds. **Chronic, Prolonged Exposure or Repeated Overexposure:** Persons with a history, allergies, or known sensitization to soluble nickel compounds would be expected to be high risk from exposure. Examination of the nasal cavities and lungs should be surveyed for evidence of chronic disorder. Suspected carcinogen. Reproductive or genetic defect hazard. See section 2 for further details.
Inhalation	Harmful if inhaled. May cause allergy or asthma symptoms of breathing difficulties if inhaled.
Skin	May cause an allergic skin reaction. Causes skin irritation.
Ingestion	Harmful if swallowed.

5. Fire-fighting measures

5.1. Extinguishing media

Water fog. Do not use CO2

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: No hazardous decomposition data available.

Avoid breathing dust / fume / gas / mist / vapors / spray.

Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Persons performing the clean-up work should wear personal protective clothing and equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatible materials: Strong reducing agents.

See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

NOT INTENDED FOR DRUG USE. FOR INDUSTRIAL USE ONLY.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value

0007786-81-4	Nickel sulfate.	OSHA	PEL 1.0 mg/m3 as Ni
		ACGIH	TLV 0.1 mg/m3 as Ni
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007786-81-4	Nickel sulfate.	OSHA	Select Carcinogen: No
		NTP	Known: Yes; Suspected: No
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Wear nitrile or similar chemical resistant gloves to keep skin contact to a minimum.
Refer to the manufacturer's recommendations regarding the suitability of any gloves used.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Green Liquid
Odor	None
Odor threshold	Not Measured
pH	5.5-6.5
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	>100 C
Flash Point	Not Measured
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured

	Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.26
Solubility in Water	Soluble
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Strong reducing agents.

10.6. Hazardous decomposition products

No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Nickel sulfate. - (7786-81-4)	264.00, Rat - Category: 3	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	4	Harmful if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	4	Harmful if inhaled.
Skin corrosion/irritation	2	Causes skin irritation.
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	1	May cause allergy or asthma symptoms of breathing difficulties if inhaled.
Skin sensitization	1	May cause an allergic skin reaction.
Germ cell mutagenicity	2	Suspected of causing genetic defects.
Carcinogenicity	1A	May cause cancer by inhalation.
Reproductive toxicity	1B	May damage the unborn child.
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	1	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Nickel sulfate. - (7786-81-4)	15.30, Oncorhynchus mykiss	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

The material resulting from a clean-up operation may be considered a listed hazardous waste and therefore, subject to very specific regulations. You must contain, store, transport and dispose of all this material in accordance with all applicable Federal, State and local health and environmental regulations. The shipments of hazardous waste are subject to manifesting requirements under all applicable Federal and State Regulations. Appropriate disposal will depend on the nature of the waste material and should be performed by competent and properly permitted facilities. RCRA waste number -Not listed Empty containers should be recycled or disposed of through an approved waste management company.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	UN3082	UN3082
14.2. UN proper shipping name	Not regulated by US DOT in packages less than 100 liters.	Environmentally hazardous substances, liquid, n.o.s., (Nickel Sulfate)	Environmentally hazardous substances, liquid, n.o.s., (Nickel Sulfate)
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** 9 **Sub Class:** Not Applicable	**Air Class:** 9
14.4. Packing group	Not Applicable	III	III

14.5. Environmental hazards

IMDG Marine Pollutant: Yes (Nickel sulfate.)

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification D2A

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 Chemicals and RQs (lbs):

Nickel sulfate. (100.00)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):

Nickel sulfate.

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Nickel sulfate.

Penn RTK Substances (>1%):

Nickel sulfate.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

H332 Harmful if inhaled.

H334 May cause allergic or asthmatic symptoms or breathing difficulties if inhaled.

H341 Suspected of causing genetic defects.

H350i May cause cancer if inhaled.

H360D May damage the unborn child.

H372 Causes damage to organs through prolonged or repeated exposure.

H400 Very toxic to aquatic life.

H410 Very toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

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The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
PRESA MGA-29 M-10

SDS Revision Date: **4/10/15**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product name:	PRESA MGA-29 M-10	SDS Code	38-0516
Chemical name:			
Chemical family:	Aqueous solution containing organic compounds		
Formula:	Not applicable		
Use	Electoless nickel plating. For industrial use only		

1.2 COMPANY IDENTIFICATION

Uyemura International Corporation

3990 Concours, Suite 425	240 Town Line Road
Ontario, CA 91764	Southington, CT 06489
909-466-5635	860-793-4011

1.3 EMERGENCY TELEPHONE NUMBER

24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Number for non-emergency questions concerning MSDS (860)793-4011
Additional information on this product may be obtained by calling (800)243-3564

2. HAZARD IDENTIFICATION

2.1 EMERGENCY OVERVIEW

OSHA Hazards

No known OSHA hazards
Not a dangerous substance according to GHS.

2.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed

Chronic, Prolonged Exposure or Repeated Overexposure

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. Toxicity of the product to the reproductive

system: Not available. Repeated or prolonged exposure is not known to aggravate medical conditions.

2.3 POTENTIAL ENVIRONMENTAL EFFECTS

None known

3. COMPOSITION INFORMATION

Principal Hazardous Component(s)	CAS#	Amount (%)
Polyoxyethylene alkyl ether		10
Thionic compound		2.0

4. FIRST AID PROCEDURES

Inhalation: Remove affected person to fresh air; if symptoms persist seek medical attention.

Skin: Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

Eyes: Check for and remove contact lenses. Flush eyes with water for 15 minutes; if irritation persists, seek medical attention.

Ingestion: Give two glasses of water for dilution; DO NOT induce vomiting; never give anything by mouth to an unconscious person; seek medical attention

Protection of first-responders: No action shall be taken involving any personal risk or suitable training. If it is suspected that fumes are still present, the rescuer should wear appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIRE FIGHTING MEASURES

Flash Point (Method used) :Non-Flammable Flammable Limits Uel:N/A
Extinguishing Media : all extinguishing media suitable Lel: N/A
Hazardous Combustion Products:
Smoke, fumes or vapors, toxic oxides of phosphorus and spontaneously flammable phosphine gas.
Special Fire Fighting Procedures : Self contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode.
Unusual Fire and Explosion Hazards : None known

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Release into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Place in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

7.1 HANDLING

Handling: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

NOT INTENDED FOR DRUG USE. FOR INDUSTRIAL USE ONLY.

Ventilation

General(mechanical ventilation is expected satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Other Precautions

None

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with work place related limits to be monitored
None
Consult local authorities for acceptable exposure limits

Engineering measures: If user generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilations or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Respiratory Protection (Specify type) : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Other Protective Gloves : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Eye Protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Other Hygiene notes : Wash hands, forearms and face after handling chemical products, before eating, drinking, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

The usual precautionary measures for dealing with chemicals should be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Color	Dark yellow to white turbidity
Physical state	solution
Odor	None
Odor threshold	No data available
Safety data	
pH	6.7
Melting point/freezing point	No data available
Boiling point	ca. 100 C
Flash point	Non-flammable
Evaporation rate	No data available
Flammability	No data available
Upper explosion limit	No data available

Lower Explosion limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	1.00
Water solubility	Complete
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Stability -- Stable
Condition to Avoid : High temperature
Incompatibility (Materials to avoid) : None known
Hazardous Decomposition Products : None
Hazardous Polymerization -- Can Not Occur

11. TOXICOLOGICAL INFORMATION

Oral LD50
No data available
Inhalation LC50
no data available
Dermal LD50
no data available
Other information on acute toxicity
No data available
Skin corrosion/irritation
Skin - rabbit - No skin irritation
Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information
No ecotoxicolgical studies are available

13. DISPOSAL CONSIDERATIONS

Dispose according to Federal, State and local regulations. Do not allow product to reach sewage system. Dispose of empty containers according to regulations.

14. TRANSPORT INFORMATION

Shipping Information
DOT
Proper Shipping Name: Chemical, N.O.I.
Hazard Class: Not Regulated
ID number:
DOT Labels:
Special Information
Packing Group:
Reportable quantity:

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status: Reported/Included

OSHA Hazards

No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
None
New Jersey Right To Know Components
None
California Proposition 65: This product contains a substance known to the State of California to cause cancer.

16 OTHER INFORMATION

HMIS Rating : Health (1), Flammability(0), Reactivity (0)
4= Extreme; 3= Severe; 2 = Moderate ; 1= Slight ; 0 =No known hazard

Last Revision Date	**New SDS**
Preparation Date	4-10-15

The information , recommendations and suggestions herein are believed to be reliable. However, it is the users responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use , by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of MSDS

Safety Data Sheet
Gobright TAM-55-M10

SDS Revision Date: **06/30/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Gobright TAM-55-M10
Alternate Names	Chemical family: Aqueous solution containing organic acids and salts MSDS Code: 22-0055

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	Plating makeup for immersion gold. For industrial use only
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Skin Irrit. 3;H316 Causes mild skin irritation. (Not adopted by US OSHA)

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Warning

H316 Causes mild skin irritation.

[Prevention]:
No GHS prevention statements
[Response]:
P332+313 If skin irritation occurs: Get medical advice / attention.
[Storage]:
No GHS storage statements
[Disposal]:
No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt **CAS Number: 0000139-33-3**	**1.0 - 10**	**Skin Irrit. 2;H315** **Eye Irrit. 2;H319** **STOT RE 2;H373**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact.
See section 2 for further details.

Skin Causes mild skin irritation. (Not adopted by US OSHA)

5. Fire-fighting measures

5.1. Extinguishing media
Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.
5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: No hazardous decomposition data available.
5.3. Advice for fire-fighters
Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Persons performing the clean-up work should wear personal protective clothing and equipment.
6.2. Environmental precautions
Do not allow spills to enter drains or watercourses.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
6.3. Methods and material for containment and cleaning up
Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling
See section 2 for further details. - [Prevention]:
7.2. Conditions for safe storage, including any incompatibilities
Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: Strong oxidizing agents, strong acids and alkalis
See section 2 for further details. - [Storage]:
7.3. Specific end use(s)
No data available

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000139-33-3	Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000139-33-3	Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless Liquid
Odor	None
Odor threshold	Not Measured
pH	4.6
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100C
Flash Point	Not Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured
	Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.18
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.
10.2. Chemical stability
Stable under normal circumstances.
10.3. Possibility of hazardous reactions
No data available.
10.4. Conditions to avoid
High temperatures, flames, and incompatibles.
10.5. Incompatible materials
Strong oxidizing agents, strong acids and alkalis
10.6. Hazardous decomposition products
No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt - (139-33-3)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	3	Causes mild skin irritation. (Not adopted by US OSHA)
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity
No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Glycine, N,N'-1,2-ethanediylbis[N-(carboxymethyl)-, disodium salt - (139-33-3)	Not Available	Not Available	Not Available

12.2. Persistence and degradability
There is no data available on the preparation itself.

12.3. Bioaccumulative potential
Not Measured
12.4. Mobility in soil
No data available.
12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.
12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods
Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act. Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Applicable	Not Applicable
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification Not Regulated

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
(No Product Ingredients Listed)
EPCRA 302 Extremely Hazardous:
(No Product Ingredients Listed)
EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)
Proposition 65 - Carcinogens (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)
N.J. RTK Substances (>1%):
(No Product Ingredients Listed)
Penn RTK Substances (>1%):
(No Product Ingredients Listed)

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.
The full text of the phrases appearing in section 3 is:
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H373 May cause damage to organs through prolonged or repeated exposure.
This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.
UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.
To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information. The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Gobright TAM-55-R

SDS Revision Date: **06/19/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Gobright TAM-55-R
Alternate Names	Chemical family: Aqueous solution containing salt of sulfurous acid. MSDS Code: 22-0155

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	Plating makeup for immersion gold. For industrial use only
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Acute Tox. 4;H302 Harmful if swallowed.

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Warning

H302 Harmful if swallowed.

[Prevention]:
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
[Response]:
P301+312 IF SWALLOWED: Call a POISON CENTER or doctor / physician if you feel unwell.
P330 Rinse mouth.
[Storage]:
No GHS storage statements
[Disposal]:
P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Sodium bisulfite. **CAS Number: 0007631-90-5**	**10 - 25**	**Acute Tox. 4;H302**	**[1][2]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention.

Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If accidentally swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact.
See section 2 for further details.

Ingestion Harmful if swallowed.

5. Fire-fighting measures

5.1. Extinguishing media
Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.
5.2. Special hazards arising from the substance or mixture
Hazardous decomposition: No hazardous decomposition data available.
5.3. Advice for fire-fighters
Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

ERG Guide No. ----

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Persons performing the clean-up work should wear personal protective clothing and equipment.
6.2. Environmental precautions
Do not allow spills to enter drains or watercourses.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.
6.3. Methods and material for containment and cleaning up
Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling
See section 2 for further details. - [Prevention]:
7.2. Conditions for safe storage, including any incompatibilities
Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: No data available.
See section 2 for further details. - [Storage]:
7.3. Specific end use(s)
No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007631-90-5	Sodium bisulfite.	OSHA	No Established Limit
		ACGIH	TWA: 5 mg/m3
		NIOSH	TWA 5 mg/m3
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007631-90-5	Sodium bisulfite.	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless Liquid
Odor	None
Odor threshold	Not Measured
pH	9.0
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	100C
Flash Point	Not Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.09
Solubility in Water	Complete
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information
No other relevant information.

10. Stability and reactivity

10.1. Reactivity
Hazardous Polymerization will not occur.
10.2. Chemical stability
Stable under normal circumstances.
10.3. Possibility of hazardous reactions
No data available.
10.4. Conditions to avoid
Excessive heat and open flame.
10.5. Incompatible materials
No data available.
10.6. Hazardous decomposition products
No hazardous decomposition data available.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Sodium bisulfite. - (7631-90-5)	1,540.00, Rat - Category: 4	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	4	Harmful if swallowed.
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sodium bisulfite. - (7631-90-5)	240.00, Mospuito Fish	119.00, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.
12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.
Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Applicable	Not Applicable
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable **DOT Label:** ---	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification Not Regulated

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): Yes
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs:
Sodium bisulfite. (5,000.00)

EPCRA 302 Extremely Hazardous:
(No Product Ingredients Listed)
EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)
Proposition 65 - Carcinogens (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)
Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)
N.J. RTK Substances (>1%):
Sodium bisulfite.
Penn RTK Substances (>1%):
Sodium bisulfite.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H302 Harmful if swallowed.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
ACL-007

SDS Revision Date: **08/26/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	ACL-007
Alternate Names	Thru-Cup ACL-007 Chemical Family: Aqueous solution containing organic acids and salts. MSDS Code : 30-0007

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

No applicable GHS categories.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

No applicable GHS categories.

[Prevention]:

No GHS prevention statements

[Response]:

No GHS response statements

[Storage]:

No GHS storage statements

[Disposal]:

No GHS disposal statements

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Ammonium citrate, dibasic. **CAS Number: 0003012-65-5**	**1.0 - 10**	**Eye Dam. 2A;H319** **STOT SE 3;H335**	**[1]**
Sodium chloride **CAS Number: 0007647-14-5**	**1.0 - 10**	**---**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General In all cases of doubt, or when symptoms persist, seek medical attention.
Never give anything by mouth to an unconscious person.

Inhalation Remove to fresh air, keep patient warm and at rest. If breathing is irregular or stopped, give artificial respiration. If unconscious place in the recovery position and obtain immediate medical attention. Give nothing by mouth.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion If swallowed obtain immediate medical attention. Keep at rest. Do NOT induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Overview This product may cause mild irritation to eyes and skin upon contact.
See section 2 for further details.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Oxides of nitrogen, carbon monoxide, and carbon dioxide.

5.3. Advice for fire-fighters

Cool closed containers exposed to fire by spraying them with water. Do not allow run off water and contaminants from fire fighting to enter drains or water courses.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Persons performing the clean-up work should wear personal protective clothing and equipment.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Incompatible materials: Avoid contact with strong acids, alkali or oxidizing agents.
See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

Not intended for drug use, For industrial use only.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0003012-65-5	Ammonium citrate, dibasic.	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0007647-14-5	Sodium chloride	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0003012-65-5	Ammonium citrate, dibasic.	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0007647-14-5	Sodium chloride	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Colorless Liquid
Odor	None
Odor threshold	Not Measured
pH	3-4
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	Not Measured
Flash Point	100C
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured
	Upper Explosive Limit: Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.06
Solubility in Water	Not Measured
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

No data available.

10.5. Incompatible materials

Avoid contact with strong acids, alkali or oxidizing agents.

10.6. Hazardous decomposition products

Oxides of nitrogen, carbon monoxide, and carbon dioxide.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Ammonium citrate, dibasic. - (3012-65-5)	No data available	No data available	No data available	No data available	No data available
Sodium chloride - (7647-14-5)	3,550.00, Rat - Category: 5	10,000.00, Rabbit - Category: NA	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	---	Not Applicable
Serious eye damage/irritation	---	Not Applicable
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable

Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Ammonium citrate, dibasic. - (3012-65-5)	Not Available	Not Available	Not Available
Sodium chloride - (7647-14-5)	1,100.00, Freshwater Fish	3,310.00, Daphnia magna	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	Not Applicable	Not Regulated	Not Regulated
14.2. UN proper shipping name	Not Regulated	Not Regulated	Not Regulated
14.3. Transport hazard class(es)	**DOT Hazard Class:** Not Applicable	**IMDG:** Not Applicable **Sub Class:** Not Applicable	**Air Class:** Not Applicable
14.4. Packing group	Not Applicable	Not Applicable	Not Applicable

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification Not Regulated

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: No
Immediate (Acute): No
Delayed (Chronic): No

EPCRA 311/312 Chemicals and RQs (lbs):

Ammonium citrate, dibasic. (5,000.00)

EPCRA 302 Extremely Hazardous :
(No Product Ingredients Listed)

EPCRA 313 Toxic Chemicals:
(No Product Ingredients Listed)

Proposition 65 - Carcinogens (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Ammonium citrate, dibasic.

Penn RTK Substances (>1%):

Ammonium citrate, dibasic.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
Accemulta MNK-4M

SDS Revision Date: **06/19/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Accemulta MNK-4M
Alternate Names	Aqueous solution containing inorganic and organic salts MSDS Code: 31-0004

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Skin Corr. 1A;H314	Causes severe skin burns and eye damage.
Eye Dam. 1;H318	Causes serious eye damage.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H314 Causes severe skin burns and eye damage.

H318 Causes serious eye damage.

[Prevention]:

P260 Do not breathe mist / vapors / spray.

P264 Wash thoroughly after handling.

P280 Wear protective gloves / eye protection / face protection.

[Response]:

P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.

P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.

P310 Immediately call a POISON CENTER or doctor / physician.

P363 Wash contaminated clothing before reuse.

[Storage]:

P405 Store locked up.

[Disposal]:

P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Sulfuric acid **CAS Number: 0007664-93-9**	**10 - 25**	**Skin Corr. 1A;H314**	**[1][2]**
oxycarboxylic acid **CAS Number: Proprietary**	**1.0 - 10**		**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General

Move victim to fresh air.
Call 911 or emergency medical service if deemed necessary.
Give artificial respiration if victim is not breathing.
Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Administer oxygen if breathing is difficult.
Remove and isolate contaminated clothing and shoes.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
For minor skin contact, avoid spreading material on unaffected skin.
Keep victim warm and quiet.
Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Inhalation

Move victim to fresh air. Call emergency medical care. Apply artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult.

Eyes

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

Skin

In the case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing all contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get immediate medical attention.

Ingestion

Do NOT induce vomiting. Rinse mouth and slowly drink several glasses of water. Call a physician. Do NOT give anything by mouth to an unconscious or convulsing person.

4.2. Most important symptoms and effects, both acute and delayed

Overview

IMMEDIATE CONCERNS: CAUTION: May cause eye or skin burns. Avoid vapor.
POTENTIAL SIDE EFFECTS
EYES: Tissue destruction and permanent eye damage may occur if not treated immediately.
SKIN: May be corrosive and cause severe burns.
INGESTION: Corrosive to mucous membranes of the mouth, esophagus, stomach & throat.
INHALATION: Avoid mist, can be a severe irritant.
ACUTE TOXICITY: Eye, skin, lung burning may be caused with exposure to mist. Avoid mist.
TARGET ORGAN STATEMENT: Contains material which may cause damage to gastrointestinal tract and respiratory tract. See section 2 for further details.

Eyes

Causes serious eye damage.

Skin

Causes severe skin burns and eye damage.

Chronic effects

Harmful if absorbed through skin or if swallowed. Contains a material that can cause target organ damage. Cancer hazard: Contains material which can cause cancer.

5. Fire-fighting measures

5.1. Extinguishing media

Recommended extinguishing media; alcohol resistant foam, CO_2, powder, water spray.
Do not use; water jet.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Oxides of sulfur at high temperatures. Hazardous gases may evolve on contact with chemicals such as cyanides, sulfides, and carbides.

Do not breathe mist / vapors / spray.

5.3. Advice for fire-fighters

Wear positive pressure self-contained breathing apparatus (SCBA).
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Vapors may accumulate in confined areas (basement, tanks, hopper/tank cars etc.).
Substance may react with water (some violently), releasing corrosive and/or toxic gases and runoff.
Contact with metals may evolve flammable hydrogen gas.
Containers may explode when heated or if contaminated with water.

TOXIC; inhalation, ingestion or contact (skin, eyes) with vapors, dusts or substance may cause severe injury, burns or death.
Reaction with water or moist air may release toxic, corrosive or flammable gases.
Reaction with water may generate much heat that will increase the concentration of fumes in the air.
Fire will produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

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6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use clean non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.

6.2. Environmental precautions

Do not allow spills to enter drains or watercourses.
Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Keep unauthorized personnel away.
Stay upwind.
Keep out of low areas.
Ventilate enclosed areas.
Contain, dilute cautiously with water, and neutralize with soda ash or lime.

7. Handling and storage

7.1. Precautions for safe handling

Do not add water to contents while in container because of violent reaction. Always add slowly and in small amounts. Never use hot water. Never add water to acids-always add acids to water.
See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: Acids react with most metals to release hydrogen gas which can form explosive mixtures in air. Water, alkaline solutions, metals, metal powder, carbides, chlorates, fuminates, nitrates, picrates, strong oxidizers, reducers, or combustible organics. Hazardous gases may evolve on contact with chemicals such as cyanides, sulfides, and carbides.
See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0007664-93-9	Sulfuric acid	OSHA	TWA 1 mg/m3
		ACGIH	TWA: 0.2 mg/m3A1, 1, Revised 2004,
		NIOSH	TWA 1 mg/m3
		Supplier	No Established Limit
Proprietary	oxycarboxylic acid	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0007664-93-9	Sulfuric acid	OSHA	Select Carcinogen: No
		NTP	Known: Yes; Suspected: No
		IARC	Group 1: Yes; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
Proprietary	oxycarboxylic acid	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory	Use NIOSH/MSHA approved respirator, following manufacturer's recommendations when concentrations exceed permissible exposure limits.
Eyes	Wear safety glasses with side shields to protect the eyes. An eye wash station is suggested as a good workplace practice.
Skin	Chemical resistant clothing such as coveralls/apron boots should be worn. Emergency eyewash station should be in close proximity. Chemical Impervious Gloves
Engineering Controls	Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.
Other Work Practices	An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Yellow Liquid
Odor	Characteristic
Odor threshold	Not Measured
pH	<2
Melting point / freezing point	Not Measured
Initial boiling point and boiling range	110C
Flash Point	Not Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	1.08
Solubility in Water	Miscible
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Stable under normal circumstances.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Excessive heat and open flame.

10.5. Incompatible materials

Acids react with most metals to release hydrogen gas which can form explosive mixtures in air. Water, alkaline solutions, metals, metal powder, carbides, chlorates, fuminates, nitrates, picrates, strong oxidizers, reducers, or combustible organics.
Hazardous gases may evolve on contact with chemicals such as cyanides, sulfides, and carbides.

10.6. Hazardous decomposition products

Oxides of sulfur at high temperatures. Hazardous gases may evolve on contact with chemicals such as cyanides, sulfides, and carbides.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Sulfuric acid - (7664-93-9)	2,140.00, Rat - Category: 5	No data available	No data available	No data available	No data available
oxycarboxylic acid - (Proprietary)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	---	Not Applicable
Acute toxicity (dermal)	---	Not Applicable
Acute toxicity (inhalation)	---	Not Applicable
Skin corrosion/irritation	1A	Causes severe skin burns and eye damage.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	---	Not Applicable
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Sulfuric acid - (7664-93-9)	42.00, Gambusia affinis	42.50, Pandalus montagui	Not Available
oxycarboxylic acid - (Proprietary)	Not Available	Not Available	Not Available

12.2. Persistence and degradability
There is no data available on the preparation itself.
12.3. Bioaccumulative potential
Not Measured
12.4. Mobility in soil
No data available.
12.5. Results of PBT and vPvB assessment
This product contains no PBT/vPvB chemicals.
12.6. Other adverse effects
No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN2796	UN2796	UN2796
14.2. UN proper shipping name	UN2796, Sulfuric acid , 8, II	Sulfuric acid	Sulfuric acid
14.3. Transport hazard class(es)	**DOT Hazard Class:** 8 **DOT Label:** 8	**IMDG:** 8 **Sub Class:** Not Applicable	**Air Class:** 8
14.4. Packing group	II	II	II

14.5. Environmental hazards

IMDG Marine Pollutant: No

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification D2B E

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: Yes
Immediate (Acute): Yes
Delayed (Chronic): No

Note: Strong inorganic acid mists containing sulfuric acid are listed on the California Proposition 65 Carcinogen List. [Sulfuric acid, in and of itself, is not listed under Proposition 65. However, if one has sulfuric acid, which through its intended use generates an acid mist that in turn contains sulfuric acid that would meet the listing. The term "strong" does not refer to the concentration of the acid, but rather the strength of the acid. The basis for the listing of strong inorganic acid mists containing sulfuric acid was the formal identification by the National Toxicology Program (NTP), in its Ninth Report on Carcinogens, that this chemical mixture is "known to be a human carcinogen." (Public notice available at http://www.oehha.ca.gov/prop65/CRNR_notices/admin_listing/intent_to_list/noil19b4.html.)]

EPCRA 311/312 Chemicals and RQs (lbs):

Sulfuric acid (1,000.00)

EPCRA 302 Extremely Hazardous:

Sulfuric acid

EPCRA 313 Toxic Chemicals:

Sulfuric acid

Proposition 65 - Carcinogens (>0.0%):

Palladium Compound

Proposition 65 - Developmental Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):

(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):

(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Sulfuric acid

Penn RTK Substances (>1%):

Sulfuric acid

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

The full text of the phrases appearing in section 3 is:

H314 Causes severe skin burns and eye damage.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.
The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product name: Auruna 6700 Gold Salts
(M)SDS number: 02-6700
Product use: For electroplating use. For industrial use only
Formula: Not applicable

1.2 COMPANY IDENTIFICATION

Uyemura International Corporation
3990 Concours, Suite 425
Ontario, CA 91761
(909) 466-5635

UIC Technical Center
240 Town Line Road
Southington, CT 06489
(860) 793-4011

1.3 EMERGENCY TELEPHONE NUMBER

24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300. For International Call +1-703-527-3887 (Collect)
Number for non-emergency questions concerning MSDS (860)793-4011
Additional information on this product may be obtained by calling (800)243-3564

2. HAZARD IDENTIFICATION

OSHA Status

This product is considered hazardous by OSHA Hazard Communication Standard (29 CFR 1910.1200)

Emergency Overview

OSHA Hazards

Highly toxic by inhalation, Highly toxic by ingestion, Highly toxic by skin absorption

Danger

H300 Fatal if swallowed
H310- Fatal in contact with skin
H330-Fatal if inhaled

H315Causes skin irritation
H318-Causes serious eye damage
H400-Very toxic to aquatic life
H 410- Very toxic to aquatic life with long lasting effects

Prevention
Do not breathe dust/ fume/ gas/ mist/ vapors/ spray. Wash hands thoroughly after handling.
Use outdoors or in well-ventilated area
Avoid release to the environment.
Wear protective gloves/ protective clothing. Wear respiratory protection if ventilation is poor.
Response
IF ON SKIN: Gently wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Immediately call a POISON CENTER or doctor/ physician.
Storage/Disposal
Dispose of contents/ container to an approved waste disposal plant.

Additional: Contact with acids liberates very toxic gas

GHS Classification

Acute toxicity, oral (Category 2)
Acute toxicity, inhalation (Category 2)
Acute toxicity, dermal (Category 1)
Acute aquatic toxicity (Category 1)
Chronic aquatic toxicity (Category 1)

2.2 POTENTIAL HEALTH EFFECTS

Routes of Entry

Eyes Yes
Skin Yes
Inhalation Yes
Ingestion Yes

Effects of Single Acute Overexposure

Overexposure may result in weakness, headaches, confusion, nausea, vomiting, eye and skin irritation, slow gasping respiration. Death may occur if material is ingested.

Chronic, Prolonged Exposure or Repeated Overexposure

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. Toxicity of the product to the reproductive system: Not available. This substance is toxic to the lungs, mucous membranes. Repeated or prolonged exposure of this product can produce target organ damage. Repeated exposure to vapors or dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Posioning has an effect on the central nervous system

2.3 POTENTIAL ENVIRONMENTAL EFFECTS

Do not allow product to reach sewers, ground water or any water bodies.

3. COMPOSITION INFORMATION

Principal Hazardous Component(s)	CAS#	Amount (%)
*Potassium cyanide	151-50-8	1.9
Potassium gold cyanide	13967-50-5	98.1

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section

4. FIRST AID PROCEDURES

Observe self- protection

Remove contaminated or saturated clothing immediately and dispose of safely.

Bring affected persons out of danger area.Do not leave affected person unattended. Do not use direct mouth to mouth resuscitation. (self-protection) In case of difficulties, supply oxygen. Keep warm and in stable position.. Place person on side in stable position if unconscious.

Possible signs of poisoning: headache dizziness, drowsiness, nausea, seizures, unconsciousness, respiratory disturbance, cessation of breathing, cardiac arrest

Following Inhalation:

Notify ambulance immediately (keyword: poisoning by hydrogen cyanide)

Take affected persons out into fresh air.

Do not leave affected persons unattended.

Keep warm and in stable position.

In case of difficulties in breathing, supply oxygen. Employ artificial respiration if breathing ceases. Do not use mouth-to-mouth resuscitation (own protection), use operated respirator bag.

Place person on side in stable position if unconscious.

Following contact with skin:

Consult doctor immediately

Keep warm and in stable position.

Keep warm and in stable position.

Do not leave affected persons unattended.

In case of difficulties in breathing ,supply oxygen. Employ artificial respiration if breathing ceases. Place person on side in stable position if unconscious.

Following eye contact:

Check for and remove contact lenses. IMMEDIATELY flush eyes with running water for at least 15 minutes. Do not use an eye ointment. Seek medical attention.

If the substance is swallowed

Notify ambulance immediately (keyword: poisoning by hydrogen cyanide)

Do not force patient to vomit. Only when patient is fully conscious, have patient rinse out mouth with water. Do not leave affected persons unattended. Keep warm and in stable position. In case of difficulties in breathing, supply oxygen. Employ artificial respiration if breathing ceases. Do not use mouth-to-mouth resuscitation (own protection), use operated respirator bag.

Place person on side in stable position if unconscious.

Instructions for doctor:
Possible signs of poisoning
Discrimination in 2 stages seems appropriate
1. mild poisoning: none unconsciousness
2. very serious poisoning: unconsciousness
Other symptoms provide no reliable guidelines for prognosis
Symptoms of the central nervous system:
Early stage: headache, dizziness, somolence(drowsiness), nausea
Late stage: seizures, coma
Pulmonary symptoms:
Early stage: dyspnea, tachypnea
Late stage: hypoventilation, Cheyne-Stokes respiration,apnea
Cardiovascular symptoms:
Early stage: hypertension, sinus arrhythmia, atrioventricular arrhythmia, bradycardia
Late stage: tachycardia, complex arrhythmias, cardiac arrest
Skin symptoms:
Early stage: rosy skin color
Late stage: cyanosis
Effect on the metabolism:
Lactate acidosis up to pH 7.1 and lactate level of 17 mmol/L are described.

Treatment
Prevention of absorption

Following inhalation of HCN gas (hydrogen cyanide)
Bring affected persons out of danger. Observe self protection

After skin contact with liquid hydrogen cyanide:
Cyanide intake through skin absorption and inhalation (hydrogen cyanide vapor!)
Remove contaminated clothing immediately and dispose of safely. Wash skin immediately with plenty of water.

After skin contact with dry cyanide salt:
Adsorption unlikely through undamaged skin.
Remove contaminated or saturated clothing immediately and dispose of safely.
Wash skin immediately with plenty of water.

After eye contact with cyanide salt
Primarily expect cauterization.
Rinse thoroughly immediately with plenty of water for at least 5 minutes keeping eyelid open.

After eye contact with cyanide brine:
Primarily expect cauterization.
Wash skin with plenty of water.
When large skin areas have been cauterized, absorption possible.

Rinse thoroughly immediately with plenty of water for at least 5 minutes keeping eyelid open.

If substance is swallowed:
Only when patient fully conscious: Have patient rinse mouth out with water. First give antidote if necessary, then gastric irrigation under gastroscopic observation, administration of charcoal.

Treatment of symptoms
Administration of oxygen, artificial respiration, treatment of arrhythmias, treatment of spasmodic fit, correction of acid-base balance. Follow-up of patient, if re-absorption possible (after oral intake, after skin absorption)

Antidote treatment
In case of slight poisoning or danger of re-absorption(Intake method: skin, gastro-intestinal tract) Administration of sodium thiosulfate possible.
In the event of severe poisoning, administration of antidote necessary.
Observe national methods of treatment – Information about licensing of antidotes in different countries not available.

Common antidote combinations
Warning! Dosage level relevant for adults weighing 70 kg.

Dicobalt edetate: 300 mg (1 ampoule) i.v.
Antidote in the event of false diagnosis or overdosage: sodium calcium edetate

Hydroxocobolamin/sodium thiosulfate:
4g hydroxocobolamin by slow infusion; then 8 g sodium thiosulfate by infusion. The hydroxocobolamin dosage can be raised if necessary.

Amyl nitrite/sodium nitrite/sodium thiosulfate: amyl nitrite every 15 to 30 seconds by inhalation, then 300-600 mg sodium nitrite i.v., then 12.5 g sodium thiosulfate by infusion.
Antidote in the event of false diagnosis or overdosage (methemoglobinema > 30%): toluidine blue, methylene blue.
4-dimethylaminophenol, 4-DMAP/sodiumthiosulfate: 250 mg (1 vial) 4-DMAP i.v., then 12.5 sodium thiosulfate by infusion.
Antidote in the event of false diagnosis or overdosage (methemoglobinema > 30%): toluidine blue, methylene blue.

5. FIRE FIGHTING MEASURES

Flash Point (Method used) :Non-Flammable Flammable Limits Uel:N/A
Extinguishing Media : alkali powder quenching agent Lel: N/A
Unsuitable extinguishing media: carbon dioxide
Special Fire Fighting Procedures : In case of fire, wear self-contained breathing apparatus

Unusual Fire and Explosion Hazards : Hydrocyanic acid (HCN) may be released in case of fire. Under the influence of acids (as well as carbon dioxide!) hydrocyanic acid is released which is combustible and may react with air to explosive gas mixtures. Do not allow run-off to reach drains, ground water, sewers, etc.

6. ACCIDENTAL RELEASE MEASURES

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment. Concentration of hydrogen cyanide in surrounding air should be monitored (gas detection instrument)

7. HANDLING AND STORAGE

Handling: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Storage class: 6.1
Records of stock must be kept

NOT INTENDED FOR DRUG USE. FOR INDUSTRIAL USE ONLY.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with work place related limits to be monitored
Potassium cyanide CAS# 51-50-8 TLV/TWA: 5 mg/M3 (1997)
Potassium gold cyanide,CAS#13967-50-5 TWA 5 mg/M3
Consult local authorities for acceptable exposure limits

Engineering measures: If user generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilations or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Respiratory Protection (Specify type) : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Other Protective Gloves : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Eye Protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Other Hygiene notes : Wash hands, forearms and face after handling chemical products, before eating, drinking, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

The usual precautionary measures for dealing with chemicals should be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and odor	White solid, Very slight almond odor
Odor threshold	No data available

Safety data

pH	Not determined
Melting point/freezing point	No data available
Boiling point	No data available
Flash point	No data available
Evaporation rate	No data available
Flammability	No data available
Upper explosion limit	No data available
Lower Explosion limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	No data available
Water solubility	Soluble exercise extreme care when dissolving in water as HCN may be liberated.
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	Decomp>392°C
Viscosity	No data available

10. STABILITY AND REACTIVITY

Stability – Decomp>392°C Depends on the ambient conditions: humidity, CO2, and air
Condition to Avoid : Moisture, excess heat or open flames
Incompatibility (Materials to avoid) : Reacts with acids and acid fumes, strong oxidizers, nitrates and chlorates

Hazardous Decomposition Products : Containers should be securely closed as moisture will cause slow decomposition and formation of toxic HCN.
Hazardous Polymerization -- Can Not Occur

11. TOXICOLOGICAL INFORMATION

Potassium Gold Cyanide
Acute oral toxicity: LD 50 29 mg/kg, rat, (extrapolation from NaCN, Smyth et al. 1969)
Poisoning has an effect on the central nervous system.

Other information on acute toxicity no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

Inhalation	May be fatal if inhaled. May cause respiratory tract irritation.
Ingestion	May be fatal if swallowed.
Skin	May be fatal if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

Synergistic effects
no data available

Additional Information
RTECS: Not available

12. ECOLOGICAL INFORMATION

Toxicity to fish - 96.0 h	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.052 mg/l
	LC50 - Lepomis macrochirus - 0.45 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 2 mg/l - 48 h
	EC50 - Daphnia magna (Water flea) - 0.53 mg/l - 24 h
	EC50 - Daphnia magna (Water flea) - 2 mg/l - 48 h
	EC50 - Daphnia magna (Water flea) - 0.53 mg/l - 24 h
Toxicity to algae	IC50 - Scenedesmus quadricauda (Green algae) - 0.03 mg/l - 192 h
Toxicity to bacteria	- Bacteria - 0.6 - 2.3 mg/l - 0.5 h

Persistence and degradability
no data available

Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 16 Weeks Bioconcentration factor (BCF): 170

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

Chemical Oxygen	Demand (COD)

< 1 m

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal
Very toxic to aquatic life with long lasting effects
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Do not allow product to enter drainage, groundwater or waterways. Treat like potassium cyanide

13. DISPOSAL CONSIDERATIONS

Dispose according to Federal, State and local regulations. Do not allow product to reach sewage system, ground water, storm

14. TRANSPORT INFORMATION

Shipping Information
DOT
Proper Shipping Name: Cyanides, Inorganic, Solid, N.O.S. (contains Potassium cyanide)
Hazard Class: 6.1
ID number: UN 1588
DOT Labels: Toxic
Special Information
Packing Group: II
Reportable quantity:

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status: Reported/Included

HAZARDOUS CHEMICAL LISTS

TSCA Inventory Status: Reported/Included
SARA 302/304/311/312 extremely hazardous substances:POTASSIUM CYANIDE
SARA 302/304 emergency planning and notification: POTASSIUM CYANID
SARA 302/304/311/312 hazardous chemicals: POTASSIUM CYANID
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Potassium cyanide, Potassium gold cyanide: Immediate (acute) health hazard
Clean Water Act (CWA) 307: No products were found
Clean Water Act (CWA) 311: Potassium cyanide
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Form R reporting:	POTASSIUM CYANIDE	CAS 151-50-8	concentration: 1%
	CYANIDE compounds	CAS N/A	Concentration 100%

State Regulations
Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.

Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: POTASSIUM CYANIDE
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: POTASSIUM CYANIDE, POTASSIUM GOLD CYANIDE
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: POTASSIUM CYANIDE
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: POTASSIUM CYANIDE, POTASSIUM GOLD CYANIDE
Rhode Island Hazardous Substances: None of the components are listed.

This product DOES NOT contain a chemical known to the State of California to cause cancer

16 OTHER INFORMATION

HMIS Rating : Health (3), Flammability(0), Reactivity (1)
4= Extreme; 3= Severe; 2 = Moderate ; 1= Slight ; 0 =No known hazard

Last Revision Date	**8-14-12**
Preparation Date	▪ 2-14-15

The information, recommendations and suggestions herein is believed to be reliable. However, it is the users responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use , by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

Safety Data Sheet
Copkia Rip Au II

SDS Revision Date: **06/19/2014**

1. Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product Identity	Copkia Rip Au II
Alternate Names	MSDS Code: 28-0002, Proprietary salt mixture containing potassium cyanide and potassium hydroxide.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use	See Technical Data Sheet.
Application Method	See Technical Data Sheet.

1.3. Details of the supplier of the safety data sheet

Company Name	Uyemura International Corporation 3990 Concours, Suite 425 Ontario, CA 91764 240 Town Line Road Southington, CT 06489
Emergency	
24 hour Emergency Telephone No.	24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Customer Service: Uyemura International Corporation	CA: 909-466-5635, CT: 860-793-4011 Number for non-emergency questions concerning MSDS (860) 793-4011 Additional information on this product may be obtained by calling (800) 243-3564

2. Hazard identification of the product

2.1. Classification of the substance or mixture

Met. Corr. 1;H290	May be corrosive to metals.
Acute Tox. 2;H300	Fatal if swallowed.
Acute Tox. 1;H310	Fatal in contact with skin.
Acute Tox. 1;H330	Fatal if inhaled.
Skin Corr. 1A;H314	Causes severe skin burns and eye damage.
Eye Dam. 1;H318	Causes serious eye damage.
STOT RE 1;H372	Causes damage to organs through prolonged or repeated exposure.
Aquatic Chronic 1;H410	Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Using the Toxicity Data listed in section 11 and 12 the product is labeled as follows.

Danger

H290 May be corrosive to metals.
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H330 Fatal if inhaled.
H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

[Prevention]:
P234 Keep only in original container.
P260 Do not breathe mist / vapors / spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves / eye protection / face protection.
P284 Wear respiratory protection.
[Response]:
P301+330+331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+350 IF ON SKIN: Gently wash with soap and water.
P303+361+353 IF ON SKIN (or hair): Remove / Take off immediately all contaminated clothing. Rinse skin with water / shower.
P304+340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+351+338 IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P307+311 IF exposed: Call a POISON CENTER or doctor / physician.
P310 Immediately call a POISON CENTER or doctor / physician.
P314 Get Medical advice / attention if you feel unwell.
P320 Specific treatment is urgent (see information on this label).
P363 Wash contaminated clothing before reuse.
P391 Collect spillage.

[Storage]:
P403+233 Store in a well ventilated place. Keep container tightly closed.
P405 Store locked up.
P406 Store in a corrosive resistant / container with a resistant inner liner.
[Disposal]:
P501 Dispose of contents / container in accordance with local / national regulations.

3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of the relevant State and Federal Hazardous Substances regulations.

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Potassium cyanide **CAS Number: 0000151-50-8**	**50 - 75**	**Met. Corr. 1;H290** **Acute Tox. 2;H300** **Acute Tox. 1;H310** **Acute Tox. 2;H330** **STOT SE 1;H370** **STOT RE 1;H372** **Aquatic Acute 1;H400** **Aquatic Chronic 1;H410**	**[1][2]**
Potassium hydroxide. **CAS Number: 0001310-58-3**	**10 - 25**	**Acute Tox. 4;H302** **Skin Corr. 1A;H314**	**[1][2]**
Acetic acid, lead(2+) salt **CAS Number: 0000301-04-2**	**0.10 - 1.0**	**Repr. 1A;H360Df** **STOT RE 2;H373** **Aquatic Acute 1;H400** **Aquatic Chronic 1;H410**	**[1]**

[1] Substance classified with a health or environmental hazard.
[2] Substance with a workplace exposure limit.
[3] PBT-substance or vPvB-substance.
*The full texts of the phrases are shown in Section 16.

4. First aid measures

4.1. Description of first aid measures

General

Move victim to fresh air.
Call 911 or emergency medical service if deemed necessary.
Give artificial respiration if victim is not breathing.
Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.
Administer oxygen if breathing is difficult.
Remove and isolate contaminated clothing and shoes.
In case of contact with substance, immediately flush skin or eyes with running water for at least 20 minutes.
For minor skin contact, avoid spreading material on unaffected skin.
Keep victim warm and quiet.
Effects of exposure (inhalation, ingestion or skin contact) to substance may be delayed.
Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Inhalation

Following Inhalation: Notify ambulance immediately (keyword: poisoning by hydrogen cyanide) Take affected persons out into fresh air. Do not leave affected persons

unattended. Keep warm and in stable position. In case of difficulties in breathing, supply oxygen. Employ artificial respiration if breathing ceases. Do not use mouth-to-mouth resuscitation (own protection), use operated respirator bag. Place person on side in stable position if unconscious.

Eyes Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Do not use eye ointment. Get medical attention.

Skin Following contact with skin: Consult doctor immediately Keep warm and in stable position. Keep warm and in stable position. Do not leave affected persons unattended. In case of difficulties in breathing ,supply oxygen. Employ artificial respiration if breathing ceases. Place person on side in stable position if unconscious.

Ingestion If the substance is swallowed Notify ambulance immediately (keyword: poisoning by hydrogen cyanide) Do not force patient to vomit. Only when patient is fully conscious, have patient rinse out mouth with water. Do not leave affected persons unattended. Keep warm and in stable position. In case of difficulties in breathing, supply oxygen. Employ artificial respiration if breathing ceases. Do not use mouth-to-mouth resuscitation (own protection), use operated respirator bag. Place person on side in stable position if unconscious.

4.2. Most important symptoms and effects, both acute and delayed

Overview Toxic by inhalation, in contact with skin and if swallowed Inhalation or swallowing could cause immediate unconsciousness or death. Can be absorbed through skin. Dangerous in case of skin contact (corrosive, irritant), of eye contact (irritant), ingestion. Very dangerous in case of inhalation. Corrosive to eyes and skin.. The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering.

Instructions for doctor: Possible signs of poisoning
Discrimination in 2 stages seems appropriate
1. mild poisoning: none unconsciousness
2. very serious poisoning: unconsciousness
Other symptoms provide no reliable guidelines for prognosis
Symptoms of the central nervous system:
Early stage: headache, dizziness, somolence(drowsiness), nausea
Late stage: seizures, coma
Pulmonary symptoms:
Early stage: dyspnea, tachypnea
Late stage: hypoventilation, Cheyne-Stokes respiration,apnea
Cardiovascular symptoms:
Early stage: hypertension, sinus arrhythmia, atrioventricular arrhythmia, bradycardia
Late stage: tachycardia, complex arrhythmias, cardiac arrest
Skin symptoms:
Early stage: rosy skin color
Late stage: cyanosis
Effect on the metabolism: Lactate acidosis up to pH 7.1 and lactate level of 17 mmol/L are described.

For treatment see section 16.

See section 2 for further details.

Inhalation Fatal if inhaled.

Eyes Causes serious eye damage.

Skin	Fatal in contact with skin. Causes severe skin burns and eye damage.
Ingestion	Fatal if swallowed.
Chronic effects	This substance is toxic to the lungs, mucous membranes. Repeated or prolonged exposure of this product can produce target organ damage. Repeated exposure to vapors or dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Posioning has an effect on the central nervous system

5. Fire-fighting measures

5.1. Extinguishing media

Alkali powder quenching agent. DO NOT USE CARBON DIOXIDE.

5.2. Special hazards arising from the substance or mixture

Hazardous decomposition: Containers should be securely closed as moisture will cause slow decomposition and formation of toxic HCN.

Hydrocyanic acid (HCN) may be released in case of fire. Under the influence of acids (as well as carbon dioxide!) hydrocyanic acid is released which is combustible and may react with air to explosive gas mixtures.

Keep only in original container.

Do not breathe mist / vapors / spray.

Do not get in eyes, on skin, or on clothing.

5.3. Advice for fire-fighters

Wear positive pressure self-contained breathing apparatus (SCBA).
Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection.

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes.
Some are oxidizers and may ignite combustibles (wood, paper, oil, clothing, etc.).
Contact with metals may evolve flammable hydrogen gas.
Containers may explode when heated.

TOXIC; inhalation, ingestion or skin contact with material may cause severe injury or death.
Contact with molten substance may cause severe burns to skin and eyes.
Avoid any skin contact.
Effects of contact or inhalation may be delayed.
Fire may produce irritating, corrosive and/or toxic gases.
Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution.

ERG Guide No. 154

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
Stop leak if you can do it without risk.
Prevent entry into waterways, sewers, basements or confined areas.
Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.
DO NOT GET WATER INSIDE CONTAINERS.

6.2. Environmental precautions

Concentration of hydrogen cyanide in surrounding air should be monitored. (Gas detection instrament)

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

6.3. Methods and material for containment and cleaning up

Keep unauthorized personnel away.
Stay upwind.
Keep out of low areas.
Ventilate enclosed areas.

Steps to be taken in case material is released or spilled: Liquid or solid spills should be responded to immediately. The spill, if liquid can be absorbed with an inert material; the solid spill can be swept or shoveled and put into a clean container/cover to ensure proper containment. All cleanup materials when contained must be labeled properly and stored in a safe place to await proper disposal. Persons performing the clean-up work should wear personal protective clothing and equipment.

7. Handling and storage

7.1. Precautions for safe handling

See section 2 for further details. - [Prevention]:

7.2. Conditions for safe storage, including any incompatibilities

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.
Incompatible materials: Acids (including carbon dioxide),metals
See section 2 for further details. - [Storage]:

7.3. Specific end use(s)

No data available.

8. Exposure controls and personal protection

8.1. Control parameters

Exposure

CAS No.	Ingredient	Source	Value
0000151-50-8	Potassium cyanide	OSHA	TWA 5 mg/m3 [*Note: The PEL also applies to other cyanides (as CN) except Hydrogen cyanide.]
		ACGIH	No Established Limit
		NIOSH	C 5 mg/m3 (4.7 ppm)[10-min.][*Note:Also applies to other cyanides(as CN) except Hydrogen Cyanide
		Supplier	No Established Limit
0000301-04-2	Acetic acid, lead(2+) salt	OSHA	No Established Limit
		ACGIH	No Established Limit
		NIOSH	No Established Limit
		Supplier	No Established Limit
0001310-58-3	Potassium hydroxide.	OSHA	No Established Limit
		ACGIH	Ceiling: 2 mg/m3
		NIOSH	C 2 mg/m3
		Supplier	No Established Limit

Carcinogen Data

CAS No.	Ingredient	Source	Value
0000151-50-8	Potassium cyanide	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0000301-04-2	Acetic acid, lead(2+) salt	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: Yes
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;
0001310-58-3	Potassium hydroxide.	OSHA	Select Carcinogen: No
		NTP	Known: No; Suspected: No
		IARC	Group 1: No; Group 2a: No; Group 2b: No; Group 3: No; Group 4: No;

8.2. Exposure controls

Respiratory If workers are exposed to concentrations above the exposure limit they must use the appropriate, certified respirators.

Eyes Wear safety eyewear, e.g. safety spectacles, goggles or visors to protect against the splash of liquids.

Skin Overalls which cover the body, arms and legs should be worn. Skin should not be exposed. All parts of the body should be washed after contact. PVC or rubber gloves recommended.

Engineering Controls Provide adequate ventilation. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. If these are not sufficient to maintain concentrations of particulates and any vapor below occupational exposure limits suitable respiratory protection must be worn.

Other Work Practices An eyewash fountain should be located in areas where the product is used. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 2 for further details. - [Prevention]:

9. Physical and chemical properties

Appearance	Off white to orange Solid
Odor	None
Odor threshold	Not Measured
pH Not Determined	Not Measured
Melting point / freezing point	Decomposes >392 C
Initial boiling point and boiling range	Not Measured
Flash Point	Not Flammable
Evaporation rate (Ether = 1)	Not Measured
Flammability (solid, gas)	Not Applicable
Upper/lower flammability or explosive limits	**Lower Explosive Limit:** Not Measured **Upper Explosive Limit:** Not Measured
Vapor pressure (Pa)	Not Measured
Vapor Density	Not Measured
Specific Gravity	Not Measured
Solubility in Water	Soluble exercise extreme care when dissolving in water as HCN may be liberated.
Partition coefficient n-octanol/water (Log Kow)	Not Measured
Auto-ignition temperature	Not Measured
Decomposition temperature	Not Measured
Viscosity (cSt)	Not Measured
VOC %	Not Measured

9.2. Other information

No other relevant information.

10. Stability and reactivity

10.1. Reactivity

Hazardous Polymerization will not occur.

10.2. Chemical stability

Decomp>392°C Depends on the ambient conditions: humidity, CO2, and air.

10.3. Possibility of hazardous reactions

When dissolving in water as HCN may be liberated.

10.4. Conditions to avoid

Acids and moisture.

10.5. Incompatible materials

Acids (including carbon dioxide),metals

10.6. Hazardous decomposition products

Containers should be securely closed as moisture will cause slow decomposition and formation of toxic HCN.

Hydrocyanic acid (HCN) may be released in case of fire. Under the influence of acids (as well as carbon dioxide!) hydrocyanic acid is released which is combustible and may react with air to explosive gas mixtures.

11. Toxicological information

Acute toxicity

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LD50, mg/L/4hr	Inhalation Dust/Mist LD50, mg/L/4hr	Inhalation Gas LD50, ppm
Potassium cyanide - (151-50-8)	7.49, Rat - Category: 2	22.33, Rabbit - Category: 1	No data available	No data available	63.00, Rat - Category: 1
Potassium hydroxide. - (1310-58-3)	365.00, Rat - Category: 4	No data available	No data available	No data available	No data available
Acetic acid, lead(2+) salt - (301-04-2)	No data available	No data available	No data available	No data available	No data available

Note: When no route specific LD50 data is available for an acute toxin, the converted acute toxicity point estimate was used in the calculation of the product's ATE (Acute Toxicity Estimate).

Classification	Category	Hazard Description
Acute toxicity (oral)	2	Fatal if swallowed.
Acute toxicity (dermal)	1	Fatal in contact with skin.
Acute toxicity (inhalation)	1	Fatal if inhaled.
Skin corrosion/irritation	1A	Causes severe skin burns and eye damage.
Serious eye damage/irritation	1	Causes serious eye damage.
Respiratory sensitization	---	Not Applicable
Skin sensitization	---	Not Applicable
Germ cell mutagenicity	---	Not Applicable
Carcinogenicity	---	Not Applicable
Reproductive toxicity	---	Not Applicable
STOT-single exposure	---	Not Applicable
STOT-repeated exposure	1	Causes damage to organs through prolonged or repeated exposure.
Aspiration hazard	---	Not Applicable

12. Ecological information

12.1. Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/l	48 hr EC50 crustacea, mg/l	ErC50 algae, mg/l
Potassium cyanide - (151-50-8)	0.027, Oncorhynchus mykiss	Not Available	Not Available
Potassium hydroxide. - (1310-58-3)	Not Available	Not Available	Not Available
Acetic acid, lead(2+) salt - (301-04-2)	Not Available	Not Available	Not Available

12.2. Persistence and degradability

There is no data available on the preparation itself.

12.3. Bioaccumulative potential

Not Measured

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.

12.6. Other adverse effects

No data available.

13. Disposal considerations

13.1. Waste treatment methods

Do not allow into drains or water courses. Wastes and emptied containers should be disposed of in accordance with regulations made under the Control of Pollution Act and the Environmental Protection Act.

Using information provided in this data sheet advice should be obtained from the Waste Regulation Authority, whether the special waste regulations apply.

14. Transport information

	DOT (Domestic Surface Transportation)	IMO / IMDG (Ocean Transportation)	ICAO/IATA
14.1. UN number	UN3290	UN3290	UN3290
14.2. UN proper shipping name	UN3290, Toxic solid, corrosive, inorganic, n.o.s.,(Potassium cyanide and potassium hydroxide), 6.1, I	Toxic solid, corrosive, inorganic, n.o.s.,(Potassium cyanide and potassium hydroxide)	Toxic solid, corrosive, inorganic, n.o.s.,(Potassium cyanide and potassium hydroxide)
14.3. Transport hazard class(es)	**DOT Hazard Class:** 6.1 **DOT Label:** 6.1, 8	**IMDG:** 6.1 **Sub Class:** Not Applicable	**Air Class:** 6.1
14.4. Packing group	I	I	I

14.5. Environmental hazards

IMDG Marine Pollutant: Yes (Potassium cyanide)

14.6. Special precautions for user

No further information

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

15. Regulatory information

Regulatory Overview The regulatory data in Section 15 is not intended to be all-inclusive, only selected regulations are represented. All ingredients of this product are listed on the TSCA (Toxic Substance Control Act) Inventory or are not required to be listed on the TSCA Inventory.

WHMIS Classification D1A E

US EPA Tier II Hazards

Fire: No
Sudden Release of Pressure: No
Reactive: Yes
Immediate (Acute): Yes
Delayed (Chronic): Yes

EPCRA 311/312 Chemicals and RQs (lbs):

Potassium cyanide (10.00)

Potassium hydroxide. (1,000.00)

EPCRA 302 Extremely Hazardous:

Potassium cyanide

EPCRA 313 Toxic Chemicals:

Potassium cyanide

Proposition 65 - Carcinogens (>0.0%):

Acetic acid, lead(2+) salt

Proposition 65 - Developmental Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Female Repro Toxins (>0.0%):
(No Product Ingredients Listed)

Proposition 65 - Male Repro Toxins (>0.0%):
(No Product Ingredients Listed)

N.J. RTK Substances (>1%):

Potassium cyanide

Potassium hydroxide.

Penn RTK Substances (>1%):

Potassium cyanide

Potassium hydroxide.

16. Other information

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, expressed or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to our products. Customers/users of this product must comply with all applicable health and safety laws, regulations, and orders.

Treatment
Prevention of absorption: Following inhalation of HCN gas (hydrogen cyanide) Bring affected persons out of danger. Observe self protection

After skin contact with liquid hydrogen cyanide: Cyanide intake through skin absorption and inhalation (hydrogen cyanide vapor!)Remove contaminated clothing immediately and dispose of safely. Wash skin immediately with plenty of water.

After skin contact with dry cyanide salt: Adsorption unlikely through undamaged skin. Remove contaminated or saturated clothing immediately and dispose of safely. Wash skin immediately with plenty of water.

After eye contact with cyanide salt: Primarily expect cauterization. Rinse thoroughly immediately with plenty of water for at least 5 minutes keeping eyelid open.

After eye contact with cyanide brine: Primarily expect cauterization. Wash skin with plenty of water. When large skin areas have been cauterized, absorption possible. Rinse thoroughly immediately with plenty of water for at least 5 minutes keeping eyelid open.

If substance is swallowed: Only when patient fully conscious: Have patient rinse mouth out with water. First give antidote if necessary, then gastric irrigation under gastroscopic observation, administration of charcoal.

Treatment of symptoms Administration of oxygen, artificial respiration, treatment of arrhythmias, treatment of spasmodic fit, correction of acid-base balance. Follow-up of patient, if re-absorption possible (after oral intake, after skin absorption)

Antidote treatment In case of slight poisoning or danger of re-absorption(Intake method: skin, gastro-intestinal tract) Administration of sodium thiosulfate possible. In the event of severe poisoning, administration of antidote necessary.
Observe national methods of treatment – Information about licensing of antidotes in different countries not available.

Common antidote combinations Warning! Dosage level relevant for adults weighing 70 kg.

Dicobalt edetate: 300 mg (1 ampoule) i.v. Antidote in the event of false diagnosis or overdosage: sodium calcium edetate
Hydroxocobolamin/sodium thiosulfate: 4g hydroxocobolamin by slow infusion; then 8 g sodium thiosulfate by infusion. The hydroxocobolamin dosage can be raised if necessary.

Amyl nitrite/sodium nitrite/sodium thiosulfate: amyl nitrite every 15 to 30 seconds by inhalation, then 300-600 mg sodium nitrite i.v., then 12.5 g sodium thiosulfate by infusion. Antidote in the event of false diagnosis or overdosage (methemoglobinema > 30%): toluidine blue, methylene blue. 4-dimethylaminophenol, 4-DMAP/sodiumthiosulfate: 250 mg (1 vial) 4-DMAP i.v., then 12.5 sodium thiosulfate by infusion. Antidote in the event of false diagnosis or overdosage (methemoglobinema > 30%): toluidine blue, methylene blue.

The full text of the phrases appearing in section 3 is:

H290 May be corrosive to metals.
H300 Fatal if swallowed.
H302 Harmful if swallowed.
H310 Fatal in contact with skin.
H314 Causes severe skin burns and eye damage.
H330 Fatal if inhaled.
H360Df May damage the unborn child. Suspected of damaging fertility. H370 Causes damage to organs.
H372 Causes damage to organs through prolonged or repeated exposure.
H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H410 Very toxic to aquatic life with long lasting effects.

This is the first version in the GHS SDS format. Listings of changes from previous versions in other formats are not applicable.

UIC urges each customer or recipient of this MSDS to study carefully to become aware of and understand the hazards associated with this product. The reader should consider consulting reference works or individuals that are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors and others whom it knows or believes will use this material or the information in this MSDS and any other information regarding hazards or safety; 2) Furnish this same information to each of its customers for the product; and 3) Request its customers to notify their employees, customers, and other users of the product of this information.

The information, recommendations and suggestions herein is believed to be reliable. However, it is the user's responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use, by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of Document

Safety Data Sheet
PRESA MGA-29 M-10

SDS Revision Date: **4/10/15**

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product name:	PRESA MGA-29 M-10	SDS Code	38-0516
Chemical name:			
Chemical family:	Aqueous solution containing organic compounds		
Formula:	Not applicable		
Use	Electoless nickel plating. For industrial use only		

1.2 COMPANY IDENTIFICATION

Uyemura International Corporation

3990 Concours, Suite 425	240 Town Line Road
Ontario, CA 91764	Southington, CT 06489
909-466-5635	860-793-4011

1.3 EMERGENCY TELEPHONE NUMBER

24 hours a day: In case of spill, leak, exposure or accident- Call Chemtrec 1-800-424-9300 /+1-703-527-3887.
Number for non-emergency questions concerning MSDS (860)793-4011
Additional information on this product may be obtained by calling (800)243-3564

2. HAZARD IDENTIFICATION

2.1 EMERGENCY OVERVIEW

OSHA Hazards

No known OSHA hazards
Not a dangerous substance according to GHS.

2.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed

Chronic, Prolonged Exposure or Repeated Overexposure

CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. Toxicity of the product to the reproductive

system: Not available. Repeated or prolonged exposure is not known to aggravate medical conditions.

2.3 POTENTIAL ENVIRONMENTAL EFFECTS

None known

3. COMPOSITION INFORMATION

Principal Hazardous Component(s)	CAS#	Amount (%)
Polyoxyethylene alkyl ether		10
Thionic compound		2.0

4. FIRST AID PROCEDURES

Inhalation: Remove affected person to fresh air; if symptoms persist seek medical attention.

Skin: Remove contaminated clothing; wash affected area with soap and water; launder contaminated clothing before reuse; if irritation persists, seek medical attention.

Eyes: Check for and remove contact lenses. Flush eyes with water for 15 minutes; if irritation persists, seek medical attention.

Ingestion: Give two glasses of water for dilution; DO NOT induce vomiting; never give anything by mouth to an unconscious person; seek medical attention

Protection of first-responders: No action shall be taken involving any personal risk or suitable training. If it is suspected that fumes are still present, the rescuer should wear appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

5. FIRE FIGHTING MEASURES

Flash Point (Method used) :Non-Flammable Flammable Limits Uel:N/A
Extinguishing Media : all extinguishing media suitable Lel: N/A
Hazardous Combustion Products:
Smoke, fumes or vapors, toxic oxides of phosphorus and spontaneously flammable phosphine gas.
Special Fire Fighting Procedures : Self contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode.
Unusual Fire and Explosion Hazards : None known

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Release into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Place in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

7.1 HANDLING

Handling: Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage: Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

NOT INTENDED FOR DRUG USE. FOR INDUSTRIAL USE ONLY.

Ventilation

General(mechanical ventilation is expected satisfactory where this product is stored and handled in closed equipment. Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

Other Precautions

None

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Components with work place related limits to be monitored
None
Consult local authorities for acceptable exposure limits

Engineering measures: If user generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilations or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Respiratory Protection (Specify type) : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Other Protective Gloves : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Eye Protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Other Hygiene notes : Wash hands, forearms and face after handling chemical products, before eating, drinking, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

The usual precautionary measures for dealing with chemicals should be observed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Color	Dark yellow to white turbidity
Physical state	solution
Odor	None
Odor threshold	No data available
Safety data	
pH	6.7
Melting point/freezing point	No data available
Boiling point	ca. 100 C
Flash point	Non-flammable
Evaporation rate	No data available
Flammability	No data available
Upper explosion limit	No data available

Lower Explosion limit	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	1.00
Water solubility	Complete
Partition coefficient: n-octanol/water	No data available
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available

10. STABILITY AND REACTIVITY

Stability -- Stable
Condition to Avoid : High temperature
Incompatibility (Materials to avoid) : None known
Hazardous Decomposition Products : None
Hazardous Polymerization -- Can Not Occur

11. TOXICOLOGICAL INFORMATION

Oral LD50
No data available
Inhalation LC50
no data available
Dermal LD50
no data available
Other information on acute toxicity
No data available
Skin corrosion/irritation
Skin - rabbit - No skin irritation
Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation
Respiratory or skin sensitization
no data available
Germ cell mutagenicity
no data available
Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

12. ECOLOGICAL INFORMATION

Ecotoxicological Information
No ecotoxicolgical studies are available

13. DISPOSAL CONSIDERATIONS

Dispose according to Federal, State and local regulations. Do not allow product to reach sewage system. Dispose of empty containers according to regulations.

14. TRANSPORT INFORMATION

Shipping Information
DOT
Proper Shipping Name: Chemical, N.O.I.
Hazard Class: Not Regulated
ID number:
DOT Labels:
Special Information
Packing Group:
Reportable quantity:

15. REGULATORY INFORMATION

U.S. Federal Regulations

TSCA Inventory Status: Reported/Included

OSHA Hazards

No known OSHA hazards

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components
None
New Jersey Right To Know Components
None
California Proposition 65: This product contains a substance known to the State of California to cause cancer.

16 OTHER INFORMATION

HMIS Rating : Health (1), Flammability(0), Reactivity (0)
4= Extreme; 3= Severe; 2 = Moderate ; 1= Slight ; 0 =No known hazard

Last Revision Date	**New SDS**
Preparation Date	4-10-15

The information , recommendations and suggestions herein are believed to be reliable. However, it is the users responsibility to determine the safe handling and suitability for his/her use of the product described herein. Since the use by others is outside our control, no guarantee, expressed or implied, is made by Uyemura International Corporation as to the effects of such use, the results obtained or the safety and toxicity of the product nor does UIC per se assume any liability arising out of use , by others of the product referred to herein. Nor is the information herein to be construed as absolutely complete since more information may be desirable or necessary when particular or exceptional circumstances exist, or because of applicable laws or government regulations.

End of MSDS