Section 1. Identification

Amalgam

GHS product identifier : Tytin™

Other means of identification : Not available.

Product type : Solid.

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

Product use : Dental product: Precapsulated dental amalgam

Area of application : Professional applications.

Manufacturer : **Kerr Corporation**
1717 West Collins Avenue
Orange, CA 92867-5422
Telephone no.: 1-800-KERR-123

e-mail address of person responsible for this SDS : edwin.varela@kavokerrgroup.com

Emergency telephone number (with hours of operation) : CHEMTREC® (24 hours) U.S. : 1-800-424-9300 International: +1-703-527-3887

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

This product consists of a 2 part precapsulated system: mercury and a metal alloy powder. The health and physical hazards of this SDS are based on liquid elemental mercury.

Classification of the substance or mixture : CORROSIVE TO METALS - Category 1
ACUTE TOXICITY (inhalation) - Category 1
TOXIC TO REPRODUCTION (Unborn child) - Category 1B
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : May be corrosive to metals.
Fatal if inhaled.
May damage the unborn child.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

United States

Prevention	: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear respiratory protection. Keep only in original container. Use only outdoors or in a well-ventilated area. Do not breathe dust. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
Response	: Absorb spillage to prevent material damage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician.
Storage	: Store locked up. Store in corrosive resistant container with a resistant inner liner.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	: None known.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
Other means of identification	: Not available.

CAS number/other identifiers

CAS number	: Not applicable.
Product code	: Not available.

Ingredient name	Other names	%	CAS number
mercury	mercury	30-60	7439-97-6
copper	copper	5-10	7440-50-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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 and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	: Avoid contact with mercury. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
Inhalation	: Avoid inhalation of mercury. If inhaled, remove to fresh air. Get medical attention if symptoms occur.
Skin contact	: Avoid contact with mercury. Wash contaminated skin with soap and water. Get medical attention if symptoms occur.
Ingestion	: Avoid ingestion of mercury. If swallowed, call a Poison Control Centre or doctor immediately.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	: No known significant effects or critical hazards.
Inhalation	: Fatal if inhaled.
Skin contact	: No known significant effects or critical hazards.
Ingestion	: No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact	: No specific data.

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
salivation
metallic taste
Eye irritation
respiratory tract irritation
coughing
pulmonary edema
wheezing and breathing difficulties
headache
fever
nausea or vomiting
diarrhea
abdominal cramps and pain
muscle weakness / pain
mental confusion or disorientation

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : In case of major fire and large quantities: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an 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.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
metal oxide/oxides
Mercuric oxide (HgO)
Mercury (vapor)

Section 5. Fire-fighting measures

Special protective actions for fire-fighters : In case of major fire and large quantities: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : For professional use only. Handle with extreme care. Avoid contact with mercury. Avoid inhalation of mercury. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : For professional use only. Handle with extreme care. Avoid contact with mercury. Avoid inhalation of mercury. Do not touch or walk through spilled material. Prompt cleanup and removal are necessary. Cover all liquid droplets with a commercially available mercury vapor suppressant such as HG-X or elemental sulfur.

Large spill : For professional use only. Handle with extreme care. Avoid contact with mercury. Avoid inhalation of mercury. Do not touch or walk through spilled material. Prompt cleanup and removal are necessary. Isolate the area. Do not attempt to clean up spill. Notify your manager for additional instructions. Never use a vacuum cleaner to clean up mercury. The vacuum will put mercury into the air and increase exposure. Collect the droplets using specialized mercury vacuum cleaners.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Absorb spillage to prevent material damage.

Advice on general occupational hygiene : 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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : 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. Store in corrosive resistant container with a resistant inner liner. Store locked up. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
mercury	**OSHA PEL Z2 (United States, 2/2013).** CEIL: 1 mg/10m³ **NIOSH REL (United States, 10/2013).** **Absorbed through skin.** TWA: 0.05 mg/m³, (as Hg) 10 hours. Form: Hg Vapor CEIL: 0.1 mg/m³, (as Hg) Form: Other than Hg Vapor **ACGIH TLV (United States, 6/2013).** **Absorbed through skin.** TWA: 0.025 mg/m³, (as Hg) 8 hours. Form: Inorganic **OSHA PEL 1989 (United States, 3/1989).** **Absorbed through skin.** TWA: 0.05 mg/m³, (as Hg) 8 hours. Form: Vapor
copper	**ACGIH TLV (United States, 6/2013).** TWA: 1 mg/m³, (as Cu) 8 hours. Form: Dust and mist TWA: 0.2 mg/m³ 8 hours. Form: Fume **OSHA PEL 1989 (United States, 3/1989).** TWA: 1 mg/m³, (as Cu) 8 hours. Form: Dusts and Mists TWA: 0.1 mg/m³, (as Cu) 8 hours. Form: Fume **NIOSH REL (United States, 10/2013).** TWA: 1 mg/m³, (as Cu) 10 hours. Form: Dusts and Mists **OSHA PEL (United States, 2/2013).** TWA: 1 mg/m³ 8 hours. Form: Dusts and Mists TWA: 0.1 mg/m³ 8 hours. Form: Fume

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, 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.

Eye/face 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

United States

Section 8. Exposure controls/personal protection

Hand protection	:	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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	:	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.
Other skin protection	:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	:	Use a properly fitted, particulate filter 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.

Section 9. Physical and chemical properties

Appearance

Physical state	:	Solid. [Precapsulated dental amalgam: Metal alloy powder / Mercury (Mobile liquid.)]
Color	:	Metal alloy powder: Dark grey. Mercury: Silvery.
Odor	:	Metal alloy powder: Odorless. Mercury: Odorless.
Odor threshold	:	Not available.
pH	:	Not available.
Melting point	:	-38.889°C (-38°F) [Mercury]
Boiling point	:	356.67°C (674°F) [Mercury]
Flash point	:	Not applicable.
Evaporation rate	:	Not available.
Flammability (solid, gas)	:	Not applicable.
Lower and upper explosive (flammable) limits	:	Not available.
Vapor pressure	:	0.00016 kPa (0.0012 mm Hg) [room temperature] [Mercury]
Vapor density	:	Not available.
Relative density	:	13.35 [Water = 1 [Mercury]]
Solubility	:	Insoluble in the following materials: cold water and hot water.
Solubility in water	:	0.00002 g/l [Mercury]
Partition coefficient: n-octanol/water	:	Not available.
Auto-ignition temperature	:	Not available.
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : Avoid high temperatures. Toxic mercury vapor concentration increases with temperature.

Incompatible materials : Reactive or incompatible with the following materials: Halogens. Ammonia. Strong oxidizing materials. Keep away from strong acids.(HNO_3, H_2SO_4, HCl) Corrosive to metal (Amalgam formation).

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary : Based on the criteria of the protocol, this product is considered non-cytotoxic per ISO 10993-5.

Irritation/Corrosion

Not available.

Conclusion/Summary

Skin : Corrosive to metal. Non-corrosive to skin.

Eyes : Corrosive to metal. Non-corrosive to the eyes. Over-exposure signs/symptoms: Vapor may be irritating to eyes and respiratory system.

Respiratory : May cause respiratory irritation. Over-exposure signs/symptoms: Inhalation of vapor/ mist may result in lung edema.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Tytin™	skin	Guinea pig	Not sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Tytin™	Ames Salmonella / Mammalian Microsome Mutagenicity Assay	Subject: Bacteria	Negative

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
mercury	-	3	-

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
copper	Category 3	Not applicable.	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
mercury	Category 1	Not determined	nervous system

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : Fatal if inhaled.

Skin contact : No known significant effects or critical hazards.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
salivation
metallic taste
Eye irritation
respiratory tract irritation
coughing
pulmonary edema
wheezing and breathing difficulties
headache
fever
nausea or vomiting
diarrhea
abdominal cramps and pain
muscle weakness / pain
mental confusion or disorientation

Skin contact : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary : Prolonged or repeated exposure to mercury vapor and/or particles may cause mercury poisoning (Mercurialism). Chronic inhalation of mercury affects the nervous system (central nervous system and peripheral nervous system) and leads to neuropsychiatric disturbances.

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : May damage the unborn child.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Route	ATE value
Inhalation (dusts and mists)	0.05 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
mercury	Acute EC50 2.5 ppb Marine water	Algae - Bacillariophyta	72 hours
	Acute EC50 0.05 ppm Marine water	Algae - Macrocystis pyrifera - Young	4 days
	Acute LC50 0.002 mg/dm3 Marine water	Crustaceans - Fenneropenaeus penicillatus - Larvae	48 hours
	Acute LC50 4 µg/l Marine water	Fish - Chrysophrys major - Larvae	96 hours
	Chronic EC10 1 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
copper	Acute EC50 1100 µg/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute EC50 2.1 µg/l Fresh water	Daphnia - Daphnia longispina - Juvenile (Fledgling, Hatchling, Weanling)	48 hours

Section 12. Ecological information

	Acute IC50 13 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata - Exponential growth phase	72 hours
	Acute IC50 5.4 mg/l Marine water	Aquatic plants - Plantae - Exponential growth phase	72 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 7.56 µg/l Marine water	Fish - Periophthalmus waltoni - Adult	96 hours
	Chronic NOEC 2.5 µg/l Marine water	Algae - Nitzschia closterium - Exponential growth phase	72 hours
	Chronic NOEC 7 mg/l Fresh water	Aquatic plants - Ceratophyllum demersum	3 days
	Chronic NOEC 0.02 mg/l Fresh water	Crustaceans - Cambarus bartonii - Mature	21 days
	Chronic NOEC 2 µg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.8 µg/l Fresh water	Fish - Oreochromis niloticus - Juvenile (Fledgling, Hatchling, Weanling)	6 weeks

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
mercury	0.62	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Mercury	7439-97-6	Listed	U151

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	UN2922	UN2922	UN2922
UN proper shipping name	Corrosive liquids, toxic, n.o.s. (mercury). Marine pollutant (mercury, silver, copper) RQ (mercury, silver)	CORROSIVE LIQUID, TOXIC, N.O.S. (mercury). Marine pollutant (mercury, silver, copper)	Corrosive liquid, toxic, n.o.s. (mercury)

United States

Section 14. Transport information

Transport hazard class(es)	8 (6.1) 	8 (6.1) 	8 (6.1) 
Packing group	III	III	III
Environmental hazards	No.	Yes.	No.
Additional information	The marine pollutant mark is not required when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes. **Reportable quantity** 2.3529 lbs / 1.0682 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. **Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 5 L **Cargo aircraft** Quantity limitation: 60 L **Special provisions** IB3, T7, TP1, TP28	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. **Emergency schedules (EmS)** F-A, S-B **Special provisions** 223, 274 **IMDG Code Segregation group** 7 - Heavy metals and their salts (including their organometallic compounds) 11 - Mercury and mercury compounds	The environmentally hazardous substance mark may appear if required by other transportation regulations. **Passenger and Cargo Aircraft** Quantity limitation: 5 L Packaging instructions: 852 **Cargo Aircraft Only**Quantity limitation: 60 L Packaging instructions: 856 **Limited Quantities - Passenger Aircraft**Quantity limitation: 1 L Packaging instructions: Y841 **Special provisions** A3, A803

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 5(a)2 final significant new use rules**: mercury

TSCA 12(b) one-time export: mercury

United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: mercury; silver; copper

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Section 15. Regulatory information

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
mercury	30-60	No.	No.	No.	Yes.	Yes.
copper	5-10	No.	No.	No.	Yes.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	mercury silver copper	7439-97-6 7440-22-4 7440-50-8	30-60 30-60 5-10
Supplier notification	mercury silver copper	7439-97-6 7440-22-4 7440-50-8	30-60 30-60 5-10

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed: MERCURY; SILVER; TIN; COPPER

New York : The following components are listed: Mercury; Silver; Copper

New Jersey : The following components are listed: MERCURY, ELEMENTAL and INORGANIC COMPOUNDS; SILVER; TIN; COPPER

Pennsylvania : The following components are listed: MERCURY; SILVER; TIN; COPPER FUME

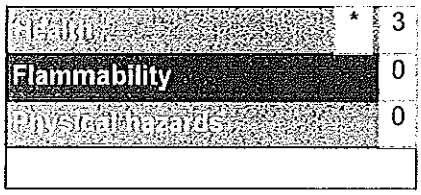
California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
mercury	No.	Yes.	No.	No.

Section 16. Other information

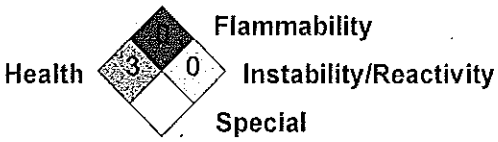
Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision	:	11/06/2014
Date of previous issue	:	No previous validation
Version	:	1
Prepared by	:	IHS
Key to abbreviations	:	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) UN = United Nations
References	:	HCS (U.S.A.)- Hazard Communication Standard International transport regulations

☑ **Indicates information that has changed from previously issued version.**

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.