Material Safety Data Sheet
SULPHURIC ACID

Print Date: September 2011

SECTION 1 – Chemical Product and Company Identification

MSDS Name: SULPHURIC ACID MSDS Preparation Date: 09-2011, Supersedes 07-2008, 02-2007, 02-2004, 02-2001& 02-98

Synonyms: Sulphuric acid, oil of vitriol, hydrogen sulphate, vitriol brown oil, mattling acid, battery acid, electrolyte acid.
Chemical Names: DE Schwefelsäure, ES Ácido sulfúrico al, FR Acide sulphurique, IT Acido solforico, NL Zwavelzuur
UN / NA Number(s): UN1830
Formula: H_2SO_4
Molecular Wt: 98.08

Product Numbers: S010301, S020301 S010301-SSNC03, S010301-SSNC04, S010301-SSNC06, S010301-SSNC09, S010301-SSNC41, S010301-SSNC61, S010301-SSNC63, S010301-SSNC65, S010301-SSND13, S010301-SSNG04, S010301-SSNG09, S010301-SSNG41, S010301-SSNG61, S010301-SSNG65, S010301-SSNQ03, S010301-SSNQ09, S020301-SSNF01, S020301-SSNF02, S020301-SSNF03, S020301-SSNF04, S020301-SSNF05, S020301-SSNF06, S020301-SSNF07, S020301-SSNF08, S040301-SSND16

Supplier: Seastar Chemicals Inc, 10005 McDonald Park Road, Sidney, BC V8L 5Y2 CANADA
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CANUTEC (CAN): (613)-996-6666

SECTION 2 – Composition/Information on Ingredients

Chemical Name	*Percent*	*CAS #*	*EINECS/ELINCS*
Sulphuric Acid	73-98%	7664-93-9	231-639-5
Water	Balance	7732-18-5	231-791-2

SECTION 3 – Hazards Identification

EMERGENCY OVERVIEW

Appearance: Clear, colourless to dark brown, odourless, dense, oily liquid. Hygroscopic. Will not burn. Can decompose at high temperatures forming toxic gases, such as sulphur oxides. Contact with combustible materials may cause fire. Highly reactive. Contact with many organic and inorganic chemicals may cause fire or explosion. Contact with metals liberates flammable hydrogen gas. Reacts violently with water. VERY TOXIC. May be fatal if inhaled or swallowed. CORROSIVE to the eyes, skin and respiratory tract. May cause blindness and permanent scarring. Causes lung injury–effects may be delayed. Strong inorganic acid mists containing sulphuric acid are CARCINOGENIC.
Target Organs: Lungs, teeth, eyes, skin, mucous membranes.

Potential Health Effects

Primary Route(s) of Entry: Inhalation and ingestion. Skin contact. Eye contact.
Effects of Acute Exposure: Corrosive, oxidizing and sulphonating properties on contact. May be fatal by ingestion, inhalation or skin contact.
LD50/LC50: CAS# 7664-93-3: Inhalation, mouse: LC50 = 320 mg/m^3/2H, Inhalation, rat: LC50 = 510 mg/m^3/2H Oral, rat: LD50 = 2140 mg/kg.
Eyes: Causes severe eye burns. May cause permanent eye injury, including blindness. Sulphuric acid mists and aerosols are expected to be irritating.
Skin: Causes severe skin burns, blisters, ulcers, and permanent scarring. Extensive burns may result in death. High mist or aerosol concentrations may cause redness, irritation and burns to the skin if contact is prolonged.
Ingestion: May be fatal if swallowed. Causes burns to the lips, tongue, throat, esophagus, and stomach; symptoms may include difficulty swallowing, intense thirst, nausea, vomiting, diarrhea, and in severe cases collapse and death. Aspiration during ingestion or vomiting may cause serious lung injury and death.
Inhalation: May be fatal if inhaled. Causes severe irritation and burns to the respiratory system. May cause pulmonary edema with symptoms including coughing, chest pain and shortness of breath. Symptoms can be delayed for 24-48 hours after exposure and are aggravated by physical exertion.

Effects of Chronic Exposure: Although sulphuric acid is widely used, there is little information on the effects of long-term exposure. Long-term exposure to corrosive materials like sulphuric acid can cause chronic respiratory irritation. Repeated exposure to sulphuric acid aerosols has caused dental erosion. Repeated skin contact with low concentrations can cause dry, red, cracked skin (dermatitis).

SECTION 4 – First Aid Measures

Eyes: Immediately flush eyes with copious amounts of water for at least 30 minutes, holding lids apart to ensure flushing of the entire surface. Do NOT allow victim to rub eyes or keep eyes closed. Get medical aid immediately.
Skin: Get medical aid immediately. Immediately flush skin with copious quantities of soap and water for at least 30 minutes while removing contaminated clothing and shoes. SPEEDY ACTION IS CRITICAL! Call a physician.
Ingestion: Do NOT induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Consult a physician immediately. Never give anything by mouth to an unconscious person.
Inhalation: This chemical is very toxic. Get medical aid immediately. Remove patient from exposure to fresh air immediately. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Call a physician. Symptoms of pulmonary edema can be delayed up to 48 hours after exposure.
Notes to Physician: Treat symptomatically and supportively. Consult a doctor and/or the nearest Poison Control Centre for all exposures.

SECTION 5 – Fire Fighting Measures

General Information: During a fire, irritating/toxic sulphur oxides may be generated. Sulphuric acid reacts violently with water and organic materials with the evolution of heat. Fire may result due to the heat generated by contact of concentrated sulphuric acid with combustible materials. Reacts with most metals, especially when diluted with water; this reaction produces highly flammable hydrogen gas that may explode if ignited. Strong dehydrating agent. Containers may explode in the heat of a fire. Firefighter's normal protective clothing (Bunker Gear) will not provide adequate protection. A full-body encapsulating chemical protective suit with positive pressure self-contained breathing apparatus (SCBA) may be necessary.
Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire. Carbon dioxide. Dry chemical power. Do not use water.
Auto-ignition Temperature: Not available.
Flash Point: Not available.
NFPA Rating: Health 3; Flammability 0; Instability 2; Other WATER REACTIVE.
Explosion Limits: Lower: Not available. Upper: Not available.

SECTION 6 – Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks: Do not touch spilled material. Prevent material from entering confined spaces, sewers or waterways. Keep materials which can burn away from spilled material. Stop or reduce leak if safe to do so.
Steps to be taken in case material is released or spilled: SMALL SPILLS: Soak up spill with absorbent material that does not react with spilled chemical. Put material in suitable, covered, labelled containers. Flush area with water. LARGE SPILLS: Evacuate area. Contact fire and emergency services and supplier for assistance and advice. Contain spill with dry sand, clay, diatomaceous earth, or absorbent material which does not react with spilled material. Cautiously dilute and neutralize with lime or soda ash. Remove liquid by corrosion-resistant pumps or vacuum equipment. Place in suitable, covered, labelled containers. Contaminated absorbent material may pose the same hazards as the spilled product.
Waste disposal method: According to all applicable regulations.

SECTION 7 – Handling and Storage

Handling: This material is a CORROSIVE and VERY TOXIC liquid. Avoid generating vapours or mists. Prevent the release of vapours or mists into the air. Highly reactive. Prevent accidental contact with water. Do not use with incompatible materials such as alkali solutions, carbides, chlorates and nitrates. See Section 10 for more information. Never return contaminated material to its original container. Never add water to a corrosive. Always add corrosives to COLD water. When mixing with water, stir small amounts in slowly. Assume that empty containers contain residues that are hazardous. Use with adequate ventilation.
Storage: Store in a cool, dry, well-ventilated area away from combustible substances. Keep container tightly closed when not in use. Do not store near alkaline or organic substances. Store in a cool place away from heated areas, sparks and flame. Do not add any other material to the container. Do not store in a damp atmosphere. Do not get in eyes, on skin or on clothing. Do not allow smoking and food consumption while handling. Handle in accordance with good storage and handling practices. Do not store near flammable substances. Wash thoroughly after handling.

SECTION 8 – Exposure Control/Personal Protection

Engineering Controls: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.
Exposure Limits:

Chemical Name	*ACGIH*	*NIOSH*	*OSHA*
Sulphuric acid	0.2 mg/m^3 TWA (thoracic fraction)	1 mg/m^3 TWA; 15 mg/m^3 IDLH	1 mg/m^3 TWA

OSHA Vacated PELs Sulphuric acid: 1 mg/m^3 TWA.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133.
Skin: Wear appropriate protective neoprene or polyethylene gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure. Apron or clothing to protect skin. Rubber boots. Sufficient to protect skin.
Respiratory Protection: Follow the OSHA respirator regulations found in 29CFR 1910.134. Always use a NIOSH-approved respirator when necessary.
Ventilation: Use only in a chemical fume hood.
Other Protective Equipment: Make eye bath and emergency shower available.

SECTION 9 – Physical and Chemical Properties

Physical State: Liquid
Appearance: Colourless
Odour: Odourless
pH: 0.3 (1 N solution); 1.2 (0.1 N solution); 2.1 (0.01 N solution)
Vapour Pressure: Less than 0.04 kPa (0.3 mm Hg) at 25 ˚C
Vapour Density: 3.38 (air = 1)
Evaporation Rate: Slower than ether.
Viscosity: Negligible.
Boiling Point: 93% (w/w): 279 ˚C (534.2 ˚F); 98% (w/w): 310-340 ˚C (590-644 ˚F); 100% (w/w): 290 ˚C (554.0 ˚F)
Freezing/Melting Point: 93% (w/w): -32 ˚C (-25.6 ˚F); 98% (w/w): 3 ˚C (37.4 ˚F); 100% (w/w): 10.4-10.5 ˚C (50.6-50.9 ˚F)
Decomposition Temperature: 340 ˚C
Solubility: Soluble in water, in all proportions with generation of much heat. Soluble in all proportions in ethanol (decomposes).
Specific Gravity/Density: 93% (w/w): 1.835 g/cm^3; 98% (w/w): 1.844 g/cm^3; 100% (w/w): 1.839 g/cm^3 @ 15 ˚C
Molecular Formula: H_2SO_4
Molecular Weight: 98.0716

SECTION 10 – Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, contact with water, metals, excess heat, combustible materials, organic materials, oxidizers, amines, bases.
Incompatibilities with Other Materials: Acetic anhydride, Acetone cyanhydrin, Acetone + Nitric acid, Acetone + Potassium dichromate, Acetonitrile + Sulphur trioxide, Acrolein, Acrylonitrile, Alcohols + Hydrogen peroxide, Allyl alcohol, Allyl and Aldehyde compounds, Allyl chloride, 2-Aminoethanol, Ammonium hydroxide, Ammonium iron(III) sulfate dodecahydrate, Ammonium triperchromate, Aniline + Glycerol + Nitrobenzene, Benzyl alcohol, Bromates + Metals, tert-Butyl-m-xylene + Nitric acid, 1-Chloro-2,3-epoxypropane, Bromine pentafluoride, n-Butyraldehyde, Cesium acetylene carbide, 4-Chloronitrobenzene + Sulphur trioxide, Copper, Dichloromethane + Ethanol + Nitrate/nitrite, 2-Cyano-4-nitrobenzenediazonium hydrogen sulphate, 2-Cyano-2-propanol, Chlorine trifluoride, Chlorosulfonic acid (Cyanides), Cycolpentadiene, Cyclopentanone oxime, 1,3-Diazidobenzene, Diethylamine, Cuprous nitride, Diisobutylene, Ephchlorohydrin, Ethylene cyanohydrin, Ethylene diamine, Ethylene glycol, Dimethoxydinitroanthraquinone, 4-Dimethylaminobenzaldehyde, 2,5-Dinitro-3-methylbenzoic acid + Sodium azide, 1,5-Dinitronaphthalene + Sulphur, Ethoxylated nonylphenol, Fulminates, Halides, Hexalithium disilicide, Ethylenimine, Other acids, Iodine heptafluoride, Metals, Isoprene, Hydrofluoric acid, Hydrogen peroxide, Metal acetylides or carbides, Metal chlorates, Metal perchlorates, 4-Methuylpyridine, Nitramide, Nitric acid + Organic materials, Nitric acid + Toluene, Nitrites, Nitroaryl bases and derivatives, Nitrobenzene, 3-Nitrobenzenesulfonic acid, Nitromethane, N-Nitromethylamine, 4-Nitrotoluene, Permanganates, Phosphorus, Phosphorus(III) oxide, Poly(silylene), Mercuric nitride, Mesityl oxide, P-Nitrotoluene, Pentasilver trihydroxydiaminophosphate, Perchlorates, Permanganates + Benzene, Phosphorus isocyanate, Picrates, Potassium t-butoxide, Potassium, 3-Propynol, Potassium chlorate, beta-Propiolactone, Propylene oxide, Pyridine, Rubidium acetylene carbide and Sodium, Silver permanganates, Silver peroxochromate, Sodium, Sodium carbonate, Sodium tetrahydroborate, Sodium thiocyanate, Sucrose, Tetramethylbenzenes, 1,2,4,5-Tetrazine, Thallium(I) azidodithiocarbonate, 1,3,5-Trinitrosohexahydro-1,3,5-triazine, Water, Zinc Iodide. Carbonates, sulfides, sulphites, carbides, chlorates.

Warning: It is fairly easy to produce the dangerous anhydrous perchloric acid from either its salts or its aqueous solutions by heating with high boiling acids and dehydrating agents such as sulphuric acid and phosphorus pentoxide.

Hazardous Decomposition Products: Oxides of sulphur.
Hazardous Polymerization: Has not been reported.
Reaction Product(s): Hydrogen is generated by the action of the acid on most metals.

SECTION 11 – Toxicological Information

RTECS: CAS# 7664-93-9: WS5600000.
LD50/LC50: CAS# 7664-93-9: Inhalation, mouse: LC50 = 320 mg/m^3/2H. Inhalation, rat: LC50 = 51 mg/m^3/2H. Oral, rat: LD50 = 2140 mg/kg.
Carcinogenicity: CAS# 7664-93-9: Workers exposed to industrial sulphuric acid mist showed a statistical increase in laryngeal, nasal, sinus, and lung cancer. These data suggests a possible relationship between carcinogenesis and inhalation of sulphuric acid mist. CA Prop 65: Not listed. OSHA: Select carcinogen. NTP: Known human carcinogen. NIOSH: Not listed. IARC: Group 1 carcinogen.
Epidemiology: Standard Draize test: Eye, rabbit – 250 µg, severe reaction.
Reproductive: Specific developmental abnormalities: musculoskeletal system, Inhalation-rabbit TCLo = 20 mg/m^3/7H (female 6-18D post).
Teratogenicity: No human information available.
Mutagenicity: Cytogenetic analysis: Ovary, hamster – 4 mmol/L.
Neurotoxicity: No information available.

SECTION 12 – Ecological Information

Ecotoxicity: Sulphuric acid is harmful to aquatic life in very low concentrations. It may be dangerous if it enters water intakes. Zebrafish: LC50 = 82 mg/L/24H. Mosquito fish: LC50 = 42 mg/L/96H. Prawn: LC50 = 42.5 ppm/48H (salt water).
Environmental: No information available. Physical: No information available. Other: No information available.

SECTION 13 – Disposal Considerations

Dispose of in a manner consistent with federal, provincial/state/territorial, and local regulations.
RCRA D-Maximum Concentration of Contaminants: None of the components are on this list.
RCRA D Series – Chronic Toxicity Reference Levels: None of the components are on this list.
RCRA F Series Wastes: None of the components are on this list.
RCRA P Series Wastes: None of the components are on this list.
RCRA U Series Wastes: None of the components are on this list.
RCRA Substances Banned from Land Disposal: None of the components are on this list.

SECTION 14 – Transport Information

CANADIAN TRANSPORTATION OF DANGEROUS GOODS (TDG) SHIPPING INFORMATION

Shipping Name and Description: SULFURIC ACID with more than 51 per cent acid; or SULPHURIC ACID with more than 51 per cent acid
UN Number: UN1830 Class: 8 Packing Group/Category: II
Special Provisions: --- Marine Pollutant: --- Passenger Carrying Road/Railway Vehicle Index: 1 kg or L

NOTE: This information incorporates the Transportation of Dangerous Goods Regulations SOR/2001-286, effective October 14, 2009.

US DEPARTMENT OF TRANSPORT (DOT) HAZARDOUS MATERIALS SHIPPING INFORMATION (49 CFR)

Shipping Name and Description: SULFURIC ACID with more than 51 percent acid
Identification Number: UN1830 Hazard Class or Division: 8 Packing Group: II

NOTE: This information was taken from the US Code of Federal Regulations Title 49 - Transportation and is effective July 1, 2009.

IATA (1 January – 31 December 2010)

UN/ID No.	Proper Shipping Name / Description	Class or Div. (Sub Risk)	Hazard Label(s)	PG	Passenger and Cargo Aircraft		Cargo Aircraft Only		S.P. See 4.4
					Pkg Inst	Max Net Qty/Pkg	Pkg Inst	Max/Net Qty/Pkg	
A	B	C	D	E	I	J	K	L	M
1830	Sulphuric acid with more than 51% acid	8	Corrosive	II	809	1 L	813	30 L	

NOTE: Consult IATA DG Regulations for the most recent information, abbreviations and reference marks.

SECTION 15 – Regulatory Information

US OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200)
OSHA Hazard Communication Evaluation: Meets criteria for hazardous material, as defined by 29 CFR 1910.1200.

US Federal

TSCA: CAS# 7664-93-9 is listed on the TSCA Inventory.
Health and Safety Reporting List: None of the components are on this list.
Chemical Test Rules: None of the components are on this list.
TSCA Section 12b: None of the components are on this list.
TSCA Significant New Use Rule (SNUR): None of the components are on this list.
CERCLA Reportable Quantities (RQ): CAS# 7664-93-9: final RQ = 1000 pounds (454 kg).
SARA Threshold Planning Quantities (TPQ): CAS# 7664-93-9: TPQ = 1000 pounds
SARA Hazard Categories: CAS# 7664-93-9: Acute, chronic, reactive.
SARA Section 313: This material contains Sulphuric acid (CAS# 7664-93-9, 95-98%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act – Hazardous Air Pollutants (HAPs): None of the components are on this list.
Clean Air Act – Class 1 Ozone Depletors: None of the components are on this list.
Clean Air Act – Class 2 Ozone Depletors: None of the components are on this list.
Clean Water Act – Hazardous Substances: CAS# 7664-93-9 is listed as a Hazardous Substance under the CWA.
Clean Water Act – Priority Pollutants: None of the components are on this list.
Clean Water Act – Toxic Pollutants: None of the components are on this list.
OSHA – Highly Hazardous: None of the components are on this list.

US State

State Right to Know: Sulphuric acid can be found on the following state Right-to-Know lists: New Jersey (RTK# 1761), Florida, Pennsylvania, Minnesota, Massachusetts (50 lbs RQ).

California Prop 65: No information available.
California No Significant Risk Level: No information available.

CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

CCOHS WHMIS Classification:

D1A - Poisonous and infectious material - Immediate and serious effects – Very toxic
E - Corrosive material

WHMIS Health Effects Criteria Met by this Chemical: D1A - Acute lethality - very toxic - immediate, E - Corrosive to skin, E - TDG Class 8 - corrosive substance.
WHMIS Ingredient Disclosure List: Included for disclosure at 1% or greater.

Detailed WHMIS Classification According to Criteria:

Class A - Compressed Gas: Does not meet criteria.
Class B - Flammable and Combustible Material: Does not meet criteria. Not combustible (does not burn).
Class C - Oxidizing Material: Does not meet criteria.
Class D - Poisonous and Infectious Material. Division 1 - Immediate and Serious Toxic Effects: Meets criteria for "Very toxic material".

Acute Lethality: "Very toxic". LC50 (rat): 255 mg/m^3 (4-hour exposure); cited as 510 mg/m^3 (2-hour exposure); physical form not specified (unconfirmed); LC50 (rat): 375 mg/m^3 (4-hour exposure); cited as 0.375 mg/L (4-hour exposure); aerosol with particle size of 1 micrometre (unconfirmed); LD50 (oral, rat): 2140 mg/kg.

Class D - Poisonous and Infectious Material. Division 2 - Other Toxic Effects: Does not meet criteria. See detailed evaluation below.

Chronic Health Effects: Insufficient information. In animal studies, chronic inhalation exposure to low concentrations of sulphuric acid mists or aerosols have produced changes in respiratory tissues and in measures of lung function. The studies are limited by continuous exposure regimes and reversibility of the observed effects was not assessed. Although sulphuric acid is widely used, there have been few specific reports of respiratory effects from long-term exposure.

Carcinogenicity: Does not meet criteria. Not listed by IARC. The IARC classification of Group 1 for strong inorganic acid mists containing sulphuric acid is for inorganic acid mists only and does not apply to sulphuric acid or sulphuric acid solutions. The ACGIH A2 carcinogenicity designation that appears with the sulphuric acid TLV refers to specifically to sulphuric acid contained in strong inorganic acid mists.

Teratogenicity and Embryotoxicity: Does not meet criteria. No human information was located. Slight embryotoxicity was seen in the offspring of rabbits at a dose that also caused maternal toxicity.

Reproductive Toxicity: Does not meet criteria. No human information was located. No changes to the reproductive organs were seen in animals exposed to 1-10 mg/m^3 over 2 years.

Mutagenicity: Does not meet criteria. No specific human information was located. No conclusions can be drawn based on a study that showed mutagenic effects in workers exposed to sulphur dioxide in a sulphuric acid factory or from a positive result obtained in a limited study in live animals.

Respiratory Tract Sensitization: Does not meet criteria. Not reported as a human respiratory sensitizer.

Skin Irritation: Corrosive materials are not also classified as irritants.

Eye Irritation: Corrosive materials are not also classified as irritants.

Skin Sensitization: Does not meet criteria. No human case reports or animal studies were located.

Class E - Corrosive Material: Meets criteria.

TDG class 8. Corrosive to carbon steel alloy 1020 and aluminum alloys. No information on the corrosivity to aluminum alloy 7075-T6 was located. pH: 0.3 (1 N solution); 1.2 (0.1 N solution); 2.1 (0.01 N solution).

Class F - Dangerously Reactive Material: Does not meet criteria.

Canadian DSL/NDSL: CAS# 7664-93-9 is listed on Canada's DSL/NDSL List.

EUROPEAN UNION (EU) CLASSIFICATION AND LABELLING INFORMATION

EU Index#: 016-020-00-8
EU Classification: Skin corrosion – Category 1A
EU Signal Word: Danger

EU Pictograms: GHS05

EU Hazard Statements:
H314: Causes severe skin burns and eye damage.

EU Precautionary Statements:
P260: Do not breathe fumes/gas/mist/vapours/spray.
P264: Wash thoroughly after handling.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P363: Wash contaminated clothing before reuse.
P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously 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.
P321: Specific treatment (see P310).
P405: Store locked up.
P501: Dispose of contents/container according to federal, regional and local government requirements.

Exposure Limits:

CAS# 7664-93-9: OEL-ARAB Republic of Egypt: TWA 1 mg/m^3
OEL-AUSTRALIA: TWA 1 mg/m^3
OEL-BELGIUM: TWA 1 mg/m^3; STEL 3 mg/m^3
OEL-CZECHOSLOVAKIA: TWA 1 mg/m^3; STEL 2 mg/m^3
OEL-DENMARK: TWA 1 mg/m^3
OEL-FINLAND: TWA 1 mg/m^3; STEL 3 mg/m^3; Skin
OEL-FRANCE: TWA 1 mg/m^3; STEL 3 mg/m^3

OEL-GERMANY: TWA 1 mg/m^3
OEL-HUNGARY: STEL 1 mg/m^3
OEL-JAPAN: TWA 1 mg/m^3
OEL-NETHERLANDS: TWA 1 mg/m^3
OEL-THE PHILIPPINES: TWA 1 mg/m^3
OEL-POLAND: TWA 1 mg/m^3

OEL-RUSSIA: TWA 1 mg/m^3; Skin
OEL-SWEDEN: TWA 1 mg/m^3; STEL 3 mg/m^3
OEL-SWITZERLAND: TWA 1 mg/m^3; STEL 2 mg/m^3
OEL-THAILAND: TWA 1 mg/m^3
OEL-TURKEY: TWA 1 mg/m^3

OEL-UNITED KINGDOM: TWA 1 mg/m^3
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGIH TLV.

SECTION 16 – Other Information

The statements contained herein are offered for informational purposes only and are based upon technical data. Seastar Chemicals Inc believes them to be accurate but does not purport to be all-inclusive. The above-stated product is intended for use only by persons having the necessary technical skills and facilities for handling the product at their discretion and risk. Since conditions and manner of use are outside our control, we (Seastar Chemicals Inc) make no warranty of merchantability or any such warranty, express or implied with respect to information and we assume no liability resulting from the above product or its use. Users should make their own investigations to determine suitability of information and product for their particular purposes.