

Safety Data Sheet

Tallow Amine

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifier

Product name: Tallow Amine

Synonym(s): Amines, tallow alkyl

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

General use: Industrial and laboratory applications

Uses advised against: No data available

1.3 Details of the supplier and of the safety data sheet

Manufacturer/Distributor

Silver Fern Chemical, Inc.

121 W. De La Guerra Street, Suite B

Santa Barbara, CA 93101 USA

1-866-282-3384

Website - www.silverfernchemical.com; email address - info@silverfernchemical.com

1.4 Emergency telephone number

+1-800-535-5053; Outside USA & Canada +1-352-323-3500

SECTION 2 - HAZARDS IDENTIFICATION

2.1 Classification of substance or mixture

Product definition: Substance

Classification in accordance with 29 CFR 1910 (OSHA HCS) and Regulation EC No. 1272/2008

Acute Toxicity, Oral - Category 4 [H302]

Aspiration Hazard - Category 1 [H304]

Skin Irritation - Category 1B [H314]

Single Target Organ Toxicity, Repeated Exposure - Category 2; STOT RE 2 [H373]

Aquatic Toxicity, Chronic - Category 1 [H410]

2.2 Label elements

Hazard symbol(s):



GHS05



GHS07



GHS08



GHS09

Signal word: Danger

Hazard statement(s): H302 - Harmful if swallowed
H304 - May be fatal if swallowed and enters airways
H314 - Causes severe skin burns and eye damage
H373 - May cause damage to the digestive tract, respiratory system and liver through prolonged and repeated exposure
H410 - Very toxic to aquatic life with long lasting effects

Precautionary statements:

[Prevention]

P260 - Do not breathing mist and vapor.
P264 - Wash hands and other exposed skin areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P273 - Avoid release to the environment

[Response]

P280 - Wear protective gloves, protective clothing and eye protection.
P301 + P331 + P330 + P310 - IF SWALLOWED: DO NOT induce vomiting. Rinse mouth. Immediately call a POISON CENTER or doctor.
P303 + P361 + P353 - IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water or shower.
P304 + P340 + P310 - IF INHALED: Remove victim to fresh air and keep at rest in a comfortable position for breathing. Immediately call a POISON CENTER or doctor.
P305 + P351 + P338 + P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
P321 + P312 - Specific treatment: Seek medical attention if you feel unwell. Refer to Section 4 of this SDS.
P363 - Wash contaminated clothing before reuse.
P391 - Collect spillage.

[Storage]

P405 + P403 + P233 - Store locked up in a well-ventilated place. Keep container tightly closed.

[Disposal]

P501 - Dispose of contents and containers in accordance with national and local regulations.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May cause drying and cracking of the skin

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

% by Weight	Ingredient	CAS Number	EC Number	Index Number	GHS Classification
> 99	Tallow alkyl amine	61790-33-8	263-125-1	612-286-00-X	H302, H304, H314, H373, H410

There are no additional ingredients present in this product 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.

3.2 Mixtures

Not applicable

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation: If product mist or vapor causes respiratory irritation or distress, move the exposed person to fresh air immediately. If breathing is difficult or irregular, administer oxygen; if respiratory arrest occurs, start artificial respiration by trained personnel. Do not use mouth-to-mouth method if victim ingested the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If unconscious, maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. If irritation persists or if the victim feels unwell, seek medical attention.

Eyes: Immediately flush eyes with large amounts of water or saline solution for at least 20 minutes, occasionally lifting the upper and lower lids. Remove contact lenses if present and easy to do after first 2 minutes and continue rinsing. Seek immediate medical attention, preferably from an ophthalmologist.

Skin: Flush skin with large amounts of water while removing contaminated clothing. Wash the affected area with soap and water followed by thorough rinsing. Wash contaminated clothing and shoes thoroughly before reuse. Chemical burns must be treated promptly by a doctor. If irritation persists, seek medical attention.

Ingestion: Rinse mouth with water if the victim is conscious. Remove dentures if present. Give the victim 1 - 2 cups of water or milk to drink if conscious, alert, able to swallow and not experiencing respiratory distress. Vomiting may occur spontaneously. DO NOT induce vomiting unless directed to do so by medical personnel. To prevent aspiration of vomit into the lungs, lay the victim on one side with the head lower than the waist. Never give anything by mouth to an unconscious or convulsing person. Do not leave the victim unattended. Seek immediate medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential health symptoms and effects

Eyes: Causes severe eye irritation and serious eye damage. Symptoms include inflammation, swelling, pain, tearing, burns and blurred vision. May cause corneal opacification and iritis. Vapor or mist can cause eye irritation.

Skin: Causes severe skin irritation and burns. Burns may occur several hours after the removal of the product. Symptoms may be delayed. May cause an allergic skin reaction in sensitive individuals. May be harmful if absorbed through the skin.

Inhalation: May be harmful if inhaled. Inhalation of vapor or mist can cause damage to mucous membranes and irritation of the upper respiratory tract with headache, cough, frothy sputum, pain, shortness of breath, difficulty breathing and cyanosis. May cause pulmonary edema, lung damage and fluid in the lungs. Effects may be delayed up to 24 hours after exposure. May cause central nervous system effects including hypotension, weak or rapid pulse, drowsiness and dizziness, narcosis, reduced alertness, loss of reflexes, incoordination and vertigo.

Ingestion: Harmful if swallowed. Causes severe irritation of and burns to the digestive tract. Causes burns to the mouth, lips, tongue and throat. Symptoms may include salivation, nausea, vomiting, pain and diarrhea. May cause perforation of the esophagus and stomach. May cause damage to the digestive system, liver and immune system. May cause circulatory collapse and renal failure. Epiglottal edema may result in respiratory distress and asphyxia. Ingestion may be fatal. Symptoms may be delayed. This material may get into the lungs during swallowing or vomiting causing lung inflammation and chemical pneumonitis, which may be fatal. Symptoms of aspiration into the lungs include coughing, gasping, choking, shortness of breath, bluish colored skin, rapid breathing and rapid heart rate.

Chronic: Pre-existing disorders of the skin and respiratory system may be aggravated by exposure to this product. Chronic exposure may cause damage to the gastrointestinal system and respiratory system. Chronic inhalation may result in asthma-like symptoms. Chronic skin contact may cause lesions. May cause an allergic skin reaction with subsequent sensitization to similar amines. Chronic exposure to unprotected skin may cause dermatitis. Effects may be delayed.

4.3 Indication of any immediate medical attention and special treatment needed

Advice to doctor and hospital personnel

Treat symptomatically and supportively.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable methods of extinction: Use extinguishing media suitable for the surrounding fire.

Unsuitable methods of extinction: No data available

5.2 Special hazards arising from the substance or mixture

Closed containers may rupture due to the buildup of pressure when exposed to extreme heat. During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent or may be delayed. Obtain medical attention.

Explosion hazards: This product is not considered to be an explosion hazard.

5.3 Advice to firefighters

Full protective equipment including self-contained breathing apparatus should be used. Water may be used to cool closed containers to prevent pressure buildup and possible autoignition or explosion when exposed to extreme heat. Water contaminated by this material must be contained from being discharged to any waterway, sewer or drain to prevent environmental contamination.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate non-essential personnel. Wear appropriate protective clothing and equipment designated in Section 8.2. Ventilate the area. Remove all sources of ignition. NO SMOKING. Clean up spills immediately. Spill creates a slip hazard.

6.2 Environmental precautions

Avoid dispersal of spilled material or runoff and prevent contact with soil and entry into drains, sewers or waterways.

6.3 Methods and materials for containment and cleaning up

Approach spill from upwind direction. DO NOT FLUSH SPILL DOWN THE DRAIN. Cover drains and contain spill. Cover spill with a large quantity of inert absorbent. Do not use combustible material such as sawdust. Collect material and place into an approved container for proper disposal. Spills may also be wiped up with absorbent material or scraped up and placed in an approved container for proper disposal. Observe possible material restrictions (Sections 7.2 and 10.5). DO NOT allow material or runoff from rinsing contaminated areas to enter floor drains or storm drains and ditches that lead to waterways. Dispose of via a licensed waste disposal contractor.

It may be required to report discharges or spills of this material on waters of the United States, their adjoining shorelines or into conduits leading to surface waters to the National Response Center at 800-424-8802. Consult local applicable standards for guidance.

6.4 Reference to other sections

For indications about waste treatment, see Section 13.

SECTION 7 – STORAGE AND HANDLING

7.1 Precautions for safe handling

Wear all appropriate personal protective equipment specified in Section 8.2. Do not get in eyes or on skin or clothing. NO SMOKING. Do not breathe vapor or mist. If normal use of material presents a respiratory hazard, use only adequate ventilation or wear an appropriate respirator. Wash contaminated clothing and shoes thoroughly before reuse.

Advice on protection against fire and explosion

This material is not considered to be a fire or explosion hazard.

7.2 Conditions for safe storage, including any incompatibilities

Store in a dry, cool, well-ventilated area away from incompatible materials (see Section 10.5), food and drink. Do not store in direct sunlight. Transfer only to approved containers having correct labeling. Keep container tightly closed when not in use. Protect containers from physical damage. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Containers of this material are hazardous when empty as they contain product residues. Use appropriate containment to avoid environmental contamination. Ventilate closed areas. Keep out of reach of children.

7.3 Specific end uses

Apart from the uses mentioned in Section 1.2, no other specific uses are stipulated.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures: Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. Use adequate ventilation. Local exhaust is preferable. Refer to Section 7.1.

Individual protection measures: Wear protective clothing to prevent repeated or prolonged contact with product. Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the representative supplier.

Hygiene measures: Facilities storing or using this material should be equipped with an eyewash station and safety shower. Change contaminated clothing. Preventive skin protection is recommended. Wash hands thoroughly after use, before eating, drinking, smoking or using the lavatory.

Eye/face protection: Wear protective splash goggles or safety glasses with unperforated side shields during use. A face shield is recommended if splashing is anticipated during use.

Hand protection: Wear butyl rubber gloves or those recommended by glove supplier for protection against materials in Section 3. Gloves should be impermeable to chemicals and oil. Breakthrough time of selected gloves must be greater than the intended use period.

Skin protection: Wear protective clothing, if needed. Wear protective boots if the situation requires.

Respiratory protection: Always use an approved respirator when vapor/aerosols exceed permissible exposure limits. Where risk assessment shows air-purifying respirators are appropriate use a half-mask respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Follow OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149.

Environmental exposure controls: Do not empty into drains.

PPE must not be considered a long-term solution to exposure control. PPE usage must be accompanied by employer programs to properly select, maintain, clean fit and use. Consult a competent industrial hygiene resource to determine hazard potential and/or the PPE manufacturers to ensure adequate protection



SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance	Colorless to yellow, semisolid or solid
Odor	Ammoniacal
Odor Threshold	No data available
Molecular Weight	No data available
Chemical Formula	No data available
pH	Alkaline
Freezing/Melting Point	35 - 45 °C (95 - 113 °F)
Initial Boiling Point	318 °C (604.4 °F)
Evaporation Rate	No data available
Flammability (solid, gas)	Not applicable
Flash Point	>134 °C (>273 °F), PMCC
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Lower Explosive Limit (LEL)	No data available
Upper Explosive Limit (UEL)	No data available
Vapor Pressure	No data available
Vapor Density	>1 [Air = 1]
Specific Gravity	0.812 @ 40 °C
Viscosity	No data available
Solubility in Water	Negligible (soluble in alcohols)
Partition Coefficient (n-octanol/water)	log P _{ow} = 4.33
Oxidizing Properties	Not applicable
Explosive Properties	Not applicable
Volatiles by Weight @ 21 °C	No data available

9.2 Other Data

No data available

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity

This material is stable under normal handling conditions and use.

10.2 Chemical Stability

This material is stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4 Conditions to avoid

Avoid high temperature, sources of ignition, hot surfaces, contact with incompatible materials. Avoid exposure to sunlight.

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong reducing agents, strong bases copper

10.6 Hazardous decomposition products

Thermal decomposition products include oxides of carbon and nitrogen oxides (NO_x).

SECTION 11 – TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute oral toxicity

LD₅₀, rat: 1,950 mg/kg

Acute inhalation toxicity

No data available

Acute dermal toxicity

No data available

Skin irritation

Causes severe skin burns.

Eye irritation

Causes serious eye damage. Risk of blindness!

Sensitization

May cause an allergic skin reaction. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Genotoxicity

No data available

Mutagenicity

No data available

Specific organ toxicity - single exposure

May cause respiratory irritation, drowsiness and dizziness.

Specific organ toxicity - repeated exposure

May cause damage to the digestive tract, respiratory system and liver through prolonged and repeated exposure.

Aspiration hazard

May be fatal if swallowed and enters the airways.

11.2 Further information

Accidental ingestion of tallow amines may be harmful. Animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

This product contains no substances present at levels greater than or equal to the 0.1% threshold (de minimis) that are identified as a probable, possible, potential or confirmed carcinogens by ACGIH, IARC, NTP or OSHA. No data is available regarding the mutagenicity or teratogenicity of this product, nor is there any available data that indicates that it causes adverse developmental or fertility effects.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12 - ECOLOGICAL INFORMATION

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Toxicity to fish: LC₅₀ - Pimephales promelas (Fathead minnow), 96 h: 0.01 - 0.1 mg/l

Toxicity to aquatic invertebrates: EC₅₀ - Daphnia magna (Water flea), 48 h: 0.01 - 0.1 mg/l

Toxicity to aquatic plants: EC₅₀ - Scenedesmus subspicatus (Green algae), 72 h: 0.01 - 0.1 mg/l

12.2 Persistence and degradability

This product is readily biodegradable.

12.3 Bioaccumulation potential

This bioaccumulation potential for this material is moderate to high.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance is not persistent, bioaccumulative and toxic (PBT) and not very persistent and very bioaccumulative (vPvB).

12.6 Other effects

Additional ecological information

Do not allow material to run into surface waters, wastewater or soil.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Methods of disposal: The generation of waste should be avoided or minimized whenever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a

licensed waste disposal contractor. 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

RCRA F-Series: No listings above the reportable threshold (de minimis)

RCRA U-Series: No listings above the reportable threshold (de minimis)

RCRA Code: D002 - Corrosive waste

SECTION 14 – TRANSPORTATION INFORMATION

Note: Transportation information provided is for reference only. Customer is urged to consult 49 CFR 100 - 177, IMDG, IATA, EC, United Nations TDG and WHMIS (Canada) TDG information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping.

Limited quantity for corrosive liquids in Packing Group II when inner packagings are not over 1 kg (2.2 lb.) or 1.0 liter (0.3 gallon) net capacity each, packed in a strong outer packaging.

USA DOT (Ground Transportation) - Bulk and Non-bulk

Proper Shipping Name	Amines, solid, corrosive, n.o.s. (Amines, tallow alkyl)
Hazard Class	8
UN/NA	UN3259
Packing Group	II
NEAREG	Guide #154
Packaging Authorization	Non-Bulk: 49 CFR 173.212; Bulk: 173.240
Packaging Exceptions	49 CFR 173.154

Drum Label(s)



IMO/IMDG (Water Transportation)

Proper Shipping Name	Amines, solid, corrosive, n.o.s. (Amines, tallow alkyl)
Hazard Class	8
UN/NA	UN3259
Packing Group	II
Marine Pollutant	YES
EMS Number	F-A, S-B



ICAO/IATA (Air Transportation)

Proper Shipping Name	Amines, solid, corrosive, n.o.s. (Amines, tallow alkyl)
Hazard Class	8
UN/NA	UN3259
Packing Group	II
Quantity Limitations	49 CFR 175.27 and 175.75 - Cargo Aircraft Only: 50 kg; Passenger Aircraft: 15 kg

RID/ADR (Rail Transportation)

Proper Shipping Name	Amines, solid, corrosive, n.o.s. (Amines, tallow alkyl)
Hazard Class	8
UN/NA	UN3259
Packing Group	II

SECTION 15 - REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for substance or mixture

U. S. Federal Regulations

OSHA Hazard Communication Standard: This material is classified as hazardous in accordance with OSHA 29 CFR 1910-1200.

Toxic Substance Control Act (TSCA) Inventory: All substances in this product are listed on the TSCA Inventory. This product is not subject to TSCA 12(b) Export Notification.

Drug Enforcement Administration (DEA) List 2, Essential Chemicals (21 CFR 1310.02(b)) and 1310.4(f)(2)) and Chemical Code Number
Not listed

Drug Enforcement Administration (DEA) Lists 1 & 2, Exempt Chemical Mixtures (21 CFR 1310.12(c)) and Code Number: Not listed

Department of Homeland Security (DHS) Chemical Facility Anti-Terrorism Standards (CFATS) Chemicals: Not listed

Superfund Amendments and Reauthorization Act (SARA)

SARA Section 311/312 Hazard Categories

Harmful if swallowed	May be fatal if swallowed and enters airways	Causes severe skin burns and eye damage
May cause damage to the digestive tract, liver and immune system through prolonged and repeated exposure		

SARA 313 Information: This material is not subject to reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986.

SARA 302/304 Extremely Hazardous Substance: None of the components of this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

SARA 302/304 Emergency Planning & Notification: None of the components of this product exceed the threshold (de minimis) reporting levels established by these sections of Title III of SARA.

Comprehensive Response Compensation and Liability Act (CERCLA): No components of the product exceed the threshold (de minimis) reporting levels for hazardous wastes established by CERCLA.

Clean Air Act (CAA)

This product does not contain any Hazardous Air Pollutants (HAPs) designated in CAA Section 112 (b).

This product does not contain Class 1 ozone depleters.

This product does not contain Class 2 ozone depleters.

Clean Water Act (CWA)

This product does not contain any Hazardous Substances listed under the CWA.

This product does not contain any Priority Pollutants.

This product does not contain any Toxic pollutants.

U.S. State Regulations

California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986

This product contains no chemical(s) known to the state of California to cause cancer birth defects or reproductive harm in concentrations that exceed the threshold (de minimis) reporting levels established under Proposition 65.

Other U.S. State Inventories

None of the components of this material are listed on any State Hazardous Substance Inventories, Right-to-Know lists and/or Air Quality/Air Pollutants lists.

Canada

WHMIS Hazard Classification: No data available

Canadian National Pollutant Release Inventory (NPRI): None of the components of this product are listed on the NPRI.

European Economic Community

WGK, Germany (Water danger/protection): 3 (high hazard to waters)

Global Chemical Inventory Lists

Country	Inventory Name	Listed
Canada	Domestic Substance List (DSL)	Yes
Canada	Non-Domestic Substance List (NDSL)	No
Europe	Inventory of New and Existing Chemicals (EINECS)	Yes
United States	Toxic Substance Control Act (TSCA)	Yes
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
New Zealand	New Zealand Inventory of Chemicals (NZIoC)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (KECI)	No
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Yes

*Yes - All components of this product comply with the inventory requirements administered by the governing country.

No - One or more components of this product are not on the inventory or are exempt from listing.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16 - OTHER INFORMATION

Hazardous Material Information System (HMIS)

HEALTH	3
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	C

C = safety glasses, gloves & apron

HMIS Hazard Rating Legend

0 = Minimal 1 = Slight 2 = Moderate

3 = Serious 4 = Severe

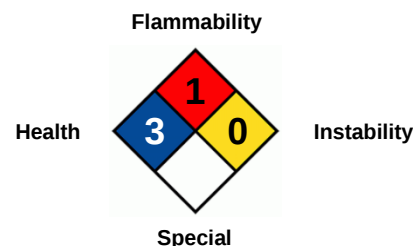
* = Chronic Health Hazard

NFPA Hazard Rating Legend

0 = Insignificant 1 = Slight 2 = Moderate

3 = High 4 = Extreme

National Fire Protection Association (NFPA)



Abbreviation Key

ACGIH	American Conference of Governmental Industrial Hygienists	LD ₅₀	Lowest Lethal Dose
ADR	Accord Dangereux Routier (European regulations concerning the international transport of dangerous goods by road)	mppcf	Millions of Particles Per Cubic Foot
CAS	Chemical Abstract Services	NA	North America
CFR	Code of Federal Regulations	NAERG	North American Emergency Response Guide Book
COC	Cleveland Open Cup	NIOSH	National Institute for Occupational Safety & Health

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Supersedes: 03 November 2017

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DOT	Department of Transportation	NTP	National Toxicology Program
EC₅₀	Half maximal effective concentration	OSHA	Occupational Safety and Health Administration
EMS	Emergency Response Procedures for Ships Carrying	PBT	Persistent, Bioaccumulating and Toxic
EPA	Environmental Protection Agency	PEL	Permissible exposure limit
ErC₅₀	Reduction of Growth Rate	PMCC	Pensky-Martens Closed Cup
ERG	Emergency Response Guide Book	ppm	Parts Per Million
FDA	Food and Drug Administration	RCRA	Resource Conservation and Recovery Act
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)	RID	Dangerous Goods by Rail
HCS	Hazard Communication Standard	RQ	Reportable Quantity
IARC	International Agency for Research on Cancer	TCC/Tag	Tagliabue Closed Cup
IATA	International Air Transport Association	TLV	Threshold Limit Value
IC₅₀	Half Maximal Inhibitory Concentration	TSCA	Toxic Substance Control Act
ICAO	International Civil Aviation Organization	TWA	Time-weighted Average
IDLH	Immediately Dangerous to Life and Health	UN	United Nations
IMDG	International Maritime Dangerous Goods	VOC	Volatile Organic Compounds
IMO	International Maritime Organization	vPvB	Very Persistent and Very Bioaccumulating
LC₅₀	50% Lethal Concentration	WHMIS	Workplace Hazardous Materials Information System
LD₅₀	50% Lethal Dose		

DISCLAIMER OF RESPONSIBILITY

The information on this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume damage or expense arising out of or in any way responsibility and expressly disclaim liability for loss, connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this SDS information may not be applicable.

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