Silver Fern Chemical, Inc.
SAFETY DATA SHEET
NP-9 Surfactant

Issue Date: 05/01/2024
Print Date: 05/02/2024

Product name: NP-9 Surfactant

1. IDENTIFICATION

Product name: NP-9 Surfactant

Recommended use of the chemical and restrictions on use
Identified uses: Multi-purpose surfactant. We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.

DISTRIBUTOR IDENTIFICATION:
Silver Fern Chemical, Inc.
121 W. De La Guerra Street, Suite B
Santa Barbara, CA 93101 USA

Customer Information Number:
Phone: 1-866-282-3384
Info@silverfernchemical.com

EMERGENCY TELEPHONE NUMBER
Infotrac 1-800-535-5053 (USA & Canada)
Outside USA & Canada 1-352-323-3500

2. HAZARDS IDENTIFICATION

Hazard classification
GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)
Acute toxicity - Category 4 - Oral
Acute toxicity - Category 4 - Inhalation
Serious eye damage - Category 1

Label elements
Hazard pictograms

Signal word: **DANGER!**

Hazards

Harmful if swallowed or if inhaled.

Causes serious eye damage.

Precautionary statements

Prevention

Avoid breathing mist or vapours.
Wash skin thoroughly after handling.
Do not eat, drink or smoke when using this product.
Use only outdoors or in a well-ventilated area.
Wear eye protection and/or face protection.

Response

IF SWALLOWED: Call a POISON CENTER and/or doctor if you feel unwell. Rinse mouth.
IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
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 and/or doctor.

Disposal

Dispose of contents and/or container to an approved waste disposal plant.

Other hazards

Slipping hazard.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Nonylphenol ethoxylated
This product is a substance.

Component	CASRN	Concentration
4-Nonylphenol branched, ethoxylated	127087-87-0	>= 97.0 %
Poly(ethylene oxide)	25322-68-3	<= 3.0 %
Dinonylphenyl polyoxyethylene	9014-93-1	<= 2.0 %
Branched 4-nonylphenol	84852-15-3	<= 0.02 %

4. FIRST AID MEASURES

Description of first aid measures
General advice:
First Aid responders should pay attention to self-protection and use the recommended protective clothing (chemical resistant gloves, splash protection). If potential for exposure exists refer to Section 8 for specific personal protective equipment.

Inhalation: Move person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration; if by mouth to mouth use rescuer protection (pocket mask, etc). If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

Skin contact: Wash off with plenty of water.

Eye contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist. Suitable emergency eye wash facility should be immediately available.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms and effects, both acute and delayed:
Harmful if swallowed or if inhaled. Causes serious eye damage.

Indication of any immediate medical attention and special treatment needed
Notes to physician: Maintain adequate ventilation and oxygenation of the patient. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIREFIGHTING MEASURES

Extinguishing media

Suitable extinguishing media: Water fog or fine spray.. Dry chemical fire extinguishers.. Carbon dioxide fire extinguishers.. Foam.. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective..

Unsuitable extinguishing media: Do not use direct water stream.. May spread fire..

Special hazards arising from the substance or mixture

Hazardous combustion products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating.. Combustion products may include and are not limited to:. Carbon monoxide.. Carbon dioxide..

Unusual Fire and Explosion Hazards: Violent steam generation or eruption may occur upon application of direct water stream to hot liquids..

Advice for firefighters

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry.. Burning liquids may be extinguished by dilution with water.. Do not use direct water stream. May spread fire.. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage..

Special protective equipment for firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves).. If protective equipment is not available or not used, fight fire from a protected location or safe distance..

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to section 7, Handling, for additional precautionary measures.

Environmental precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

Methods and materials for containment and cleaning up: Contain spilled material if possible. Absorb with materials such as: Sand. Dirt. Collect in suitable and properly labeled containers. Do not use water for cleanup. See Section 13, Disposal Considerations, for additional information. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Precautions for safe handling: Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Do not swallow. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Conditions for safe storage: No specific requirements. Additional storage and handling information on this product may be obtained by calling your sales or customer service contact. The shelf life given is for unopened containers stored under moderate temperature conditions.

Storage stability

Shelf life: Use within
24 Month

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters
If exposure limits exist, they are listed below. If no exposure limits are displayed, then no values are applicable.

Component	Regulation	Type of listing	Value

Poly(ethylene oxide)	US WEEL	TWA aerosol	10 mg/m3

Exposure controls
Engineering controls: Use engineering controls to maintain airborne level below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use only with adequate ventilation. Local exhaust ventilation may be necessary for some operations.

Individual protection measures

Eye/face protection: Use chemical goggles.

Skin protection

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Other protection: Wear clean, body-covering clothing.

Respiratory protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, use an approved respirator. Selection of air-purifying or positive-pressure supplied-air will depend on the specific operation and the potential airborne concentration of the material. For emergency conditions, use an approved positive-pressure self-contained breathing apparatus.
The following should be effective types of air-purifying respirators: Organic vapor cartridge with a particulate pre-filter.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	
Physical state	Liquid.
Color	Pale yellow slightly hazy
Odor	Mild
Odor Threshold	No test data available
pH	No test data available
Melting point/range	Not applicable to liquids
Freezing point	3.8 °C (38.8 °F) *Calculated.*
Boiling point (760 mmHg)	> 250 °C (> 482 °F) *Calculated.* Decomposes before boiling
Flash point	**closed cup** 247 °C (477 °F) *ASTM D 93* **open cup** 282 °C (540 °F) *ASTM D92*
Evaporation Rate (Butyl Acetate = 1)	No test data available
Flammability (solid, gas)	Not applicable to liquids
Flammability (liquids)	Not expected to be a static-accumulating flammable liquid.
Lower explosion limit	No test data available

Upper explosion limit	No test data available
Vapor Pressure	< 0.01 mmHg at 20 °C (68 °F) *Calculated.*
Relative Vapor Density (air = 1)	>1 *Calculated.*
Relative Density (water = 1)	1.057 at 20 °C (68 °F) / 20 °C *Calculated.*
Water solubility	partly soluble
Partition coefficient: n-octanol/water	log Pow: 2.1 - 3.4 *Calculated.*
Auto-ignition temperature	No test data available
Decomposition temperature	No test data available
Kinematic Viscosity	237 cSt at 25 °C (77 °F) *Calculated.*
Explosive properties	No data available
Oxidizing properties	No data available
Molecular weight	616 g/mol *Calculated.*

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Reactivity: No data available

Chemical stability: Thermally stable at typical use temperatures.

Possibility of hazardous reactions: Polymerization will not occur.

Conditions to avoid: Exposure to elevated temperatures can cause product to decompose.

Incompatible materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous decomposition products: Decomposition products depend upon temperature, air supply and the presence of other materials..

11. TOXICOLOGICAL INFORMATION

Toxicological information appears in this section when such data are available.

Information on likely routes of exposure
Ingestion, Inhalation, Skin contact, Eye contact.

Acute toxicity (represents short term exposures with immediate effects - no chronic/delayed effects known unless otherwise noted)

Acute Toxicity Endpoints:
Harmful if swallowed or if inhaled.

Acute oral toxicity

Information for the Product:

Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Typical for this family of materials.
LD50, Rat, 960 - 3,980 mg/kg

Information for components:

4-Nonylphenol branched, ethoxylated
Typical for this family of materials. LD50, Rat, 960 - 3,980 mg/kg

Poly(ethylene oxide)
Typical for this family of materials. LD50, Rat, > 10,000 mg/kg

Dinonylphenyl polyoxyethylene
May cause abdominal discomfort or diarrhea. LD50, Rat, 8,200 mg/kg

Branched 4-nonylphenol
LD50, Rat, >1,000 mg/kg Estimated.

Acute dermal toxicity

Information for the Product:

Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Typical for this family of materials.
LD50, Rabbit, 2,000 - 2,991 mg/kg

Information for components:

4-Nonylphenol branched, ethoxylated
Typical for this family of materials. LD50, Rabbit, 2,000 - 2,991 mg/kg

Poly(ethylene oxide)
Typical for this family of materials. LD50, Rabbit, > 20,000 mg/kg

Dinonylphenyl polyoxyethylene
The dermal LD50 has not been determined.

Branched 4-nonylphenol
LD50, Rabbit, 2,031 - 2,831 mg/kg

Acute inhalation toxicity

Information for the Product:

Prolonged excessive exposure to mist may cause serious adverse effects, even death. Vapor may cause irritation of the upper respiratory tract (nose and throat).

Typical for this family of materials.
LC50, Rat, 4 Hour, dust/mist, 1.15 mg/l
Information for components:

4-Nonylphenol branched, ethoxylated
Typical for this family of materials. LC50, Rat, 4 Hour, dust/mist, 1.15 mg/l

Poly(ethylene oxide)
Typical for this family of materials. LC50, Rat, 6 Hour, dust/mist, > 2.5 mg/l No deaths occurred at this concentration.

Dinonylphenyl polyoxyethylene
The LC50 has not been determined.

Branched 4-nonylphenol
LC50, Mouse, female, vapour, > 3.636 mg/l

Skin corrosion/irritation

Not classified based on available information.

Information for the Product:

Based on testing for product(s) in this family of materials:
Prolonged contact may cause slight skin irritation with local redness.

Information for components:

4-Nonylphenol branched, ethoxylated
Prolonged contact may cause slight skin irritation with local redness.

Poly(ethylene oxide)
Prolonged exposure not likely to cause significant skin irritation.
May cause more severe response if skin is abraded (scratched or cut).

Dinonylphenyl polyoxyethylene
Prolonged contact may cause slight skin irritation with local redness.

Branched 4-nonylphenol
Brief contact may cause severe skin burns. Symptoms may include pain, severe local redness and tissue damage.
Classified as corrosive to the skin according to DOT guidelines.

Serious eye damage/eye irritation

Causes serious eye damage.

Information for the Product:

Based on testing for product(s) in this family of materials:
May cause severe eye irritation.
May cause severe corneal injury.

Information for components:

4-Nonylphenol branched, ethoxylated
May cause severe eye irritation.

May cause severe corneal injury.

Poly(ethylene oxide)
May cause slight temporary eye irritation.
Corneal injury is unlikely.

Dinonylphenyl polyoxyethylene
Liquid may cause severe eye irritation with corneal injury. Corneal burns may occur.
Vapor or mist may cause eye irritation.

Branched 4-nonylphenol
May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Sensitization

For skin sensitization:
Not classified based on available information.

For respiratory sensitization:
Not classified due to lack of data.

Information for the Product:

For this family of materials:
For skin sensitization:
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Information for components:

4-Nonylphenol branched, ethoxylated
For this family of materials:
Did not cause allergic skin reactions when tested in humans.

For respiratory sensitization:
No relevant data found.

Poly(ethylene oxide)
For this family of materials:
Did not cause allergic skin reactions when tested in humans.
For this family of materials, sensitization studies done in guinea pigs have been negative.

For respiratory sensitization:
No relevant data found.

Dinonylphenyl polyoxyethylene
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Branched 4-nonylphenol
Did not cause allergic skin reactions when tested in guinea pigs.

For respiratory sensitization:
No relevant data found.

Specific Target Organ Systemic Toxicity (Single Exposure)

Not classified due to lack of data.

Information for the Product:

Product test data not available.

Information for components:

4-Nonylphenol branched, ethoxylated
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Poly(ethylene oxide)
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Dinonylphenyl polyoxyethylene
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Branched 4-nonylphenol
Evaluation of available data suggests that this material is not an STOT-SE toxicant.

Aspiration Hazard

Not classified due to lack of data.

Information for the Product:

Based on physical properties, not likely to be an aspiration hazard.

Information for components:

4-Nonylphenol branched, ethoxylated
Based on physical properties, not likely to be an aspiration hazard.

Poly(ethylene oxide)
Based on physical properties, not likely to be an aspiration hazard.

Dinonylphenyl polyoxyethylene
Based on physical properties, not likely to be an aspiration hazard.

Branched 4-nonylphenol
Aspiration into the respiratory system may occur during ingestion or vomiting. Due to corrosivity, tissue damage or lung injury may occur.

Chronic toxicity (represents longer term exposures with repeated dose resulting in chronic/delayed effects - no immediate effects known unless otherwise noted)

Specific Target Organ Systemic Toxicity (Repeated Exposure)

Not classified due to lack of data.

Information for the Product:

For this family of materials:
In animals, effects have been reported on the following organs:
Kidney.
Liver.

Information for components:

4-Nonylphenol branched, ethoxylated
For this family of materials:
In animals, effects have been reported on the following organs:
Kidney.
Liver.

Poly(ethylene oxide)
Based on available data, repeated exposures are not anticipated to cause significant adverse effects.
Recent findings of kidney failure and death in burn patients, as well as some studies using animal burn models, suggest that polyethylene glycol may have been a factor.
The use of topical applications containing this material may not be appropriate in severely burned patients.

Dinonylphenyl polyoxyethylene
No relevant data found.

Branched 4-nonylphenol
In animals, effects have been reported on the following organs:
Liver.
Kidney effects and/or tumors have been observed in male rats. These effects are believed to be species specific and unlikely to occur in humans.

Carcinogenicity

Not classified due to lack of data.

Information for the Product:

For this family of materials: Did not cause cancer in laboratory animals.

Information for components:

4-Nonylphenol branched, ethoxylated
For this family of materials: Did not cause cancer in laboratory animals.

Poly(ethylene oxide)
Polyethylene glycols did not cause cancer in long-term animal studies.

Dinonylphenyl polyoxyethylene
No relevant data found.

Branched 4-nonylphenol
No relevant data found.

Teratogenicity

Not classified due to lack of data.

Information for the Product:

For this family of materials: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Information for components:

4-Nonylphenol branched, ethoxylated
For this family of materials: Has been toxic to the fetus in laboratory animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Poly(ethylene oxide)
For this family of materials: Did not cause birth defects or any other fetal effects in laboratory animals.

Dinonylphenyl polyoxyethylene
No relevant data found.

Branched 4-nonylphenol
Did not cause birth defects or other effects in the fetus even at doses which caused toxic effects in the mother.

Reproductive toxicity

Not classified due to lack of data.

Information for the Product:

Product test data not available.

Information for components:

4-Nonylphenol branched, ethoxylated
No relevant data found.

Poly(ethylene oxide)
For this family of materials: In animal studies, did not interfere with reproduction.

Dinonylphenyl polyoxyethylene
No relevant data found.

Branched 4-nonylphenol
In a three-generation reproduction study in rats, nonylphenol did not interfere with standard reproductive parameters. However, some additional endpoints which are considered markers of potential reproductive toxicity were affected at higher doses that produced systemic toxicity to the parent animals.

Mutagenicity

Not classified due to lack of data.

Information for the Product:

For this family of materials: In vitro genetic toxicity studies were negative.

Information for components:

4-Nonylphenol branched, ethoxylated
For this family of materials: In vitro genetic toxicity studies were negative.

Poly(ethylene oxide)
For this family of materials: In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

Dinonylphenyl polyoxyethylene
No relevant data found.

Branched 4-nonylphenol
In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. ECOLOGICAL INFORMATION

Ecotoxicological information appears in this section when such data are available.

Toxicity

Acute toxicity to fish
Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in the most sensitive species tested).

For this family of materials:
LC50, Pimephales promelas (fathead minnow), 96 Hour, 3.8 - 6.2 mg/l, OECD Test Guideline 203 or Equivalent

Acute toxicity to aquatic invertebrates
For this family of materials:
LC50, Daphnia magna (Water flea), 48 Hour, 9.3 - 21.4 mg/l, OECD Test Guideline 202 or Equivalent

Toxicity to bacteria
For this family of materials:
IC50, Bacteria, 16 Hour, > 1,000 mg/l

Persistence and degradability

Biodegradability: For this family of materials: Based on stringent OECD test guidelines, this material cannot be considered as readily biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.
10-day Window: Not applicable
Biodegradation: < 60 %

Exposure time: 28 d
Method: OECD Test Guideline 301B or Equivalent

Theoretical Oxygen Demand: 2.15 - 2.25 mg/mg

Chemical Oxygen Demand: 2.09 - 2.25 mg/mg

Bioaccumulative potential

Bioaccumulation: For similar material(s): For this family of materials:
Partition coefficient: n-octanol/water(log Pow): 2.1 - 3.4 Calculated.
Bioconcentration factor (BCF): 5.9 - 48 Fish Estimated.

Mobility in soil

No relevant data found.

13. DISPOSAL CONSIDERATIONS

Disposal methods: DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION 1: Identified Uses. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. Waste water treatment system.

14. TRANSPORT INFORMATION

DOT

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Nonylphenol polyethylene glycol ether)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Nonylphenol polyethylene glycol ether

Classification for SEA transport (IMO-IMDG):

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.(Nonylphenol polyethylene glycol ether)
UN number	UN 3082
Class	9
Packing group	III
Marine pollutant	Nonylphenol polyethylene glycol ether
Transport in bulk according to Annex I or II of MARPOL 73/78 and the	Consult IMO regulations before transporting ocean bulk

IBC or IGC Code

Classification for AIR transport (IATA/ICAO):

Proper shipping name	Environmentally hazardous substance, liquid, n.o.s.(Nonylphenol polyethylene glycol ether)
UN number	UN 3082
Class	9
Packing group	III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312
Acute toxicity (any route of exposure)
Serious eye damage or eye irritation

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313
This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Components	**CASRN**
4-Nonylphenol branched, ethoxylated	127087-87-0

Pennsylvania Worker and Community Right-To-Know Act:
To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Prop. 65
This product contains a chemical that is at or below California Propositions 65's "safe harbor level" as determined via a risk assessment. Therefore, the chemical is not required to be listed as a Prop 65 chemical on the SDS or label.

United States TSCA Inventory (TSCA)
All components of this product are in compliance with the inventory listing requirements of the U.S. Toxic Substances Control Act (TSCA) Chemical Substance Inventory.

16. OTHER INFORMATION

Product Literature
Additional information on this and other products may be obtained by visiting our web page. Additional information on this product may be obtained by calling your sales or customer service contact. Ask for a product brochure.

Hazard Rating System
NFPA

Health	Flammability	Instability
2	1	0

Revision
Identification Number: 304570 / A001 / Issue Date: 05/01/2024 / Version: 15.0
Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

TWA	8-hr TWA
US WEEL	USA. Workplace Environmental Exposure Levels (WEEL)

Full text of other abbreviations
AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Information Source and References
This SDS is prepared by Product Regulatory Services and Hazard Communications Groups from information supplied by internal references within our company.

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 responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way 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.