

SAFETY DATA SHEET



DirectDrill™ Lubricant

Version 1.3

Revision Date 2021-04-08

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information

Product Name : DirectDrill™ Lubricant
Material : 1125293

Use : Lubricant

Company : Chevron Phillips Chemical Company LP
Drilling Specialties Company LLC
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:

866.442.9628 (North America)

1.832.813.4984 (International)

Transport:

CHEMTREC 800.424.9300 or 703.527.3887(int'l)

Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090

EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)

Mexico CHEMTREC 01-800-681-9531 (24 hours)

South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600

Argentina: +(54)-1159839431

Responsible Department : Product Safety and Toxicology Group
E-mail address : SDS@CPChem.com
Website : www.CPChem.com

For Research and Development Purposes Only. Contains substances not on the TSCA Inventory.
To be used under the direction of a Technically Qualified Individual.

SECTION 2: Hazards identification

Classification of the substance or mixture

This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

Classification

: Skin irritation, Category 2
Skin sensitization, Category 1
Germ cell mutagenicity, Category 1B

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Carcinogenicity, Category 1A
 Specific target organ toxicity - repeated exposure, Category 1,
 Eyes, Blood
 Aspiration hazard, Category 1

Labeling

Symbol(s)



Signal Word

: Danger

Hazard Statements

: H304: May be fatal if swallowed and enters airways.
 H315: Causes skin irritation.
 H317: May cause an allergic skin reaction.
 H340: May cause genetic defects.
 H350: May cause cancer.
 H372: Causes damage to organs (Eyes, Blood) through
 prolonged or repeated exposure.

Precautionary Statements

: **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been
 read and understood.
 P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.
 P264 Wash skin thoroughly after handling.
 P270 Do not eat, drink or smoke when using this product.
 P272 Contaminated work clothing must not be allowed out of
 the workplace.
 P280 Wear protective gloves/ protective clothing/ eye
 protection/ face protection.
Response:
 P301 + P310 IF SWALLOWED: Immediately call a POISON
 CENTER/ doctor.
 P302 + P352 IF ON SKIN: Wash with plenty of soap and
 water.
 P308 + P313 IF exposed or concerned: Get medical advice/
 attention.
 P331 Do NOT induce vomiting.
 P333 + P313 If skin irritation or rash occurs: Get medical
 advice/ attention.
 P362 Take off contaminated clothing and wash before reuse.
Storage:
 P405 Store locked up.
Disposal:
 P501 Dispose of contents/ container to an approved waste
 disposal plant.

Carcinogenicity:**IARC**

Group 2B: Possibly carcinogenic to humans

Naphthalene 91-20-3

NTP

Reasonably anticipated to be a human carcinogen

Phenanthrene 85-01-8

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Naphthalene

91-20-3

SECTION 3: Composition/information on ingredients

Component	CAS-No.	Weight %
Steam Cracked Bottoms	64742-90-1	75 - 99
Ethoxylated mercaptan	Proprietary	1 - 25
Naphthalene	91-20-3	1 - 5
Biphenyl	92-52-4	1 - 5
Phenanthrene	85-01-8	1 - 5
Anthracene	120-12-7	1 - 5
N,N'-di-sec-Butyl-p-phenylenediamine	101-96-2	0.5 - 1

For Research and Development Purposes Only. Contains substances not on the TSCA Inventory. To be used under the direction of a Technically Qualified Individual.

SECTION 4: First aid measures

- General advice : Move out of dangerous area. Show this material safety data sheet to the doctor in attendance.
- If inhaled : If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.
- In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well with water. If on clothes, remove clothes.
- In case of eye contact : Flush eyes with water as a precaution. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
- If swallowed : Induce vomiting immediately and call a physician. Keep respiratory tract clear. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician. Take victim immediately to hospital.

SECTION 5: Firefighting measures

- Flash point : 104°C (219°F)
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

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Fire and explosion protection : Normal measures for preventive fire protection.

SECTION 6: Accidental release measures

Personal precautions : Use personal protective equipment.

Environmental precautions : Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities.

Methods for cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

SECTION 7: Handling and storage**Handling**

Advice on safe handling : Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Dispose of rinse water in accordance with local and national regulations. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Storage

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Use : Lubricant

SECTION 8: Exposure controls/personal protection**Ingredients with workplace control parameters****US**

Components	Basis	Value	Control parameters	Note
Biphenyl	ACGIH	TWA	0.2 ppm,	
	OSHA Z-1	TWA	0.2 ppm, 1 mg/m ³	
	OSHA Z-1-A	TWA	0.2 ppm, 1 mg/m ³	
Phenanthrene	OSHA Z-1-A	TWA	0.2 mg/m ³	
	OSHA Z-1	TWA	0.2 mg/m ³	
Anthracene	OSHA Z-1-A	TWA	0.2 mg/m ³	
	OSHA Z-1	TWA	0.2 mg/m ³	
Naphthalene	ACGIH	TWA	10 ppm,	A3, Skin,
	ACGIH	STEL	15 ppm,	hematologic eff, URT

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				irr, eye irr, eye dam, (), A4, Skin,
	OSHA Z-1	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	TWA	10 ppm, 50 mg/m3	
	OSHA Z-1-A	STEL	15 ppm, 75 mg/m3	

- () Adopted values or notations enclosed are those for which changes are proposed in the NIC
 A3 Confirmed animal carcinogen with unknown relevance to humans
 A4 Not classifiable as a human carcinogen
 eye dam Eye damage
 eye irr Eye irritation
 hematologic eff Hematologic effects
 Skin Danger of cutaneous absorption
 URT irr Upper Respiratory Tract irritation

Immediately Dangerous to Life or Health Concentrations (IDLH)

Substance name	CAS-No.	Control parameters	Update
Biphenyl	92-52-4	Immediately Dangerous to Life or Health Concentration Value 100 mg/m ³	1995-03-01
Anthracene	120-12-7	Immediately Dangerous to Life or Health Concentration Value 80 mg/m ³	2017-09-01
Phenanthrene	85-01-8	Immediately Dangerous to Life or Health Concentration Value 80 mg/m ³	2017-09-01
Naphthalene	91-20-3	Immediately Dangerous to Life or Health Concentration Value 250 parts per million	1995-03-01

Biological exposure indices**US**

Substance name	CAS-No.	Control parameters	Sampling time	Update
Phenanthrene	85-01-8	1-Hydroxypyrene: 2.5 µg/l Adjusted for the Pyrene to Benzo(a)pyrene ratio of the PAH mixture to which workers are exposed (Urine) Background () With hydrolyses ()	End of shift at end of workweek	2018-03-20
		3-hydroxybenzo(a)pyrene: Nonquantitative (Urine) With hydrolyses ()	End of shift at end of workweek	2018-03-20
Anthracene	120-12-7	1-Hydroxypyrene: 2.5 µg/l Adjusted for the Pyrene to Benzo(a)pyrene ratio of the PAH mixture to which workers are exposed (Urine) Background () With hydrolyses ()	End of shift at end of workweek	2018-03-20
		3-hydroxybenzo(a)pyrene: Nonquantitative (Urine) With hydrolyses ()	End of shift at end of workweek	2018-03-20

Engineering measures

Adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection : Wear a supplied-air NIOSH approved respirator unless ventilation or other engineering controls are adequate to maintain minimal oxygen content of 19.5% by volume under

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normal atmospheric pressure. Wear a NIOSH approved respirator that provides protection when working with this material if exposure to harmful levels of airborne material may occur, such as: Air-Purifying Respirator for Organic Vapors, Dusts and Mists. Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, aerosolization, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

- Hand protection : The suitability for a specific workplace should be discussed with the producers of the protective gloves. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.
- Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place. Wear as appropriate: Lightweight protective clothing. Footwear protecting against chemicals.
- Hygiene measures : When using do not eat or drink. When using do not smoke. Wash hands before breaks and at the end of workday.

SECTION 9: Physical and chemical properties**Information on basic physical and chemical properties****Appearance**

- Form : liquid
- Physical state : liquid
- Color : Dark Brown
- Odor : No data available
- Odor Threshold : No data available

Safety data

- Flash point : 104°C (219°F)
- Ignition temperature : 348.3°C (658.9°F)
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Thermal decomposition : Not applicable
- Molecular weight : No data available
- pH : No data available
- Freezing point : No data available

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Melting point/range	No data available
Pour point	-18°C (0°F)
Initial boiling point and boiling range	: 169.4-579.4°C (336.9-1,074.9°F)
Vapor pressure	: No data available
Relative density	: 1
Density	: No data available
Water solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Solubility in other solvents	: No data available
Viscosity, kinematic	: 10 - 100 cSt at 98.9°C (210.0°F)
Evaporation rate	: No data available

SECTION 10: Stability and reactivity

Reactivity	: Stable at normal ambient temperature and pressure.
Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Possibility of hazardous reactions	
Hazardous reactions	: Further information: No decomposition if stored and applied as directed.
Conditions to avoid	: No data available.
Thermal decomposition	: Not applicable
Other data	: No decomposition if stored and applied as directed.

SECTION 11: Toxicological information**DirectDrill™ Lubricant**

SDS Number:100000104425

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Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

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Acute inhalation toxicity** : Acute toxicity estimate: > 10 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

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Acute dermal toxicity** : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

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Skin irritation** : Skin irritation
largely based on animal evidence.

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Eye irritation** : May cause eye irritation.
largely based on animal evidence.

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Sensitization** : Causes sensitization.
largely based on animal evidence.

Genotoxicity in vitro

Naphthalene : Test Type: Ames test
Result: negative

Test Type: Sister Chromatid Exchange Assay
Result: negative

Test Type: Unscheduled DNA synthesis assay
Result: negative

Genotoxicity in vivo

Naphthalene : Test Type: Mouse micronucleus assay
Result: negative

Carcinogenicity

Naphthalene : Species: Mouse
Sex: male
Dose: 10, 30 ppm
Exposure time: 105 weeks
Number of exposures: 6 hours/day, 5 days/week
Test substance: yes
Print Date: No information available.
Remarks: No evidence of carcinogenicity

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Species: Mouse
 Sex: female
 Dose: 10, 30 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: increased incidence of alveolar/bronchiolar adenomas

Species: Rat
 Sex: male and female
 Dose: 10, 30, 60 ppm
 Exposure time: 105 weeks
 Number of exposures: 6 hours/day, 5 days/week
 Test substance: yes
 Print Date: No information available.
 Remarks: nose respiratory epithelial adenoma, increased incidence of olfactory neuroblastomas

Developmental Toxicity

Naphthalene : Species: Rabbit
 Application Route: oral gavage
 Dose: 40, 200, 400 mg/kg
 Test period: 29 d, GD 6-18
 NOAEL Teratogenicity: 400 mg/kg

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Aspiration toxicity**

: May be fatal if swallowed and enters airways.

CMR effects

Steam Cracked Bottoms : Carcinogenicity: Possible human carcinogen
 Mutagenicity: In vivo tests showed mutagenic effects

Naphthalene : Carcinogenicity: Limited evidence of carcinogenicity in animal studies

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Further information**

: No data available.

SECTION 12: Ecological information**Toxicity to fish**

Ethoxylated mercaptan : LC50: 64 mg/l
 Exposure time: 96 h
 Species: Pimephales promelas (fathead minnow)
 static test

Naphthalene : LC50: 3.2 mg/l
 Exposure time: 96 h
 Species: Pimephales promelas (fathead minnow)

Toxicity to daphnia and other aquatic invertebrates

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Ethoxylated mercaptan : EC50: 2.4 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)
static test

Naphthalene LC50: 2.16 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Phenanthrene 0.1 mg/l
Exposure time: 96 h
Species: Daphnia pulex (Water flea)

Anthracene 0.035 mg/l
Exposure time: 48 h
Species: Daphnia magna (Water flea)

Toxicity to algae

Ethoxylated mercaptan : EC50: 85 mg/l
Exposure time: 72 h
Species: Selenastrum capricornutum (algae)
static test

Naphthalene EC50: 2.96 mg/l
Exposure time: 48 h
Species: Selenastrum capricornutum (algae)

M-Factor

N,N'-di-sec-butyl-p-phenylenediamine : M-Factor (Acute Aquat. Tox.) 1
M-Factor (Chron. Aquat. Tox.) 10

Biodegradability : Taking into consideration the properties of several ingredients, the product is estimated not to be readily biodegradable according to OECD classification.

Elimination information (persistence and degradability)

Bioaccumulation

N,N'-di-sec-Butyl-p-phenylenediamine : Bioconcentration factor (BCF): 125.9
Method: QSAR modeled data

Results of PBT assessment

N,N'-di-sec-Butyl-p-phenylenediamine : This substance is not considered to be persistent, bioaccumulating and toxic (PBT),. This substance is not considered to be very persistent and very bioaccumulating (vPvB).

Additional ecological information : Toxic to aquatic life with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Toxic to aquatic life.

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Long-term (chronic) aquatic hazard : Toxic to aquatic life with long lasting effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

Product : The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (NAPHTHALENE, BIPHENYL), 9, III, RQ (NAPHTHALENE, BIPHENYL)

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (STEAM CRACKED BOTTOMS, NAPHTHALENE), 9, III, (104°C), MARINE POLLUTANT, (STEAM CRACKED BOTTOMS, NAPHTHALENE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (STEAM CRACKED BOTTOMS, NAPHTHALENE), 9, III

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (STEAM CRACKED BOTTOMS, NAPHTHALENE), 9, III

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (STEAM CRACKED BOTTOMS, NAPHTHALENE), 9, III

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ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)

UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S., (STEAM CRACKED BOTTOMS, NAPHTHALENE), 9, III

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information**National legislation**

SARA 311/312 Hazards : Respiratory or skin sensitization
 Germ cell mutagenicity
 Skin corrosion or irritation
 Carcinogenicity
 Specific target organ toxicity (single or repeated exposure)
 Aspiration hazard

CERCLA Reportable Quantity : 2020 lbs
 Biphenyl

SARA 302 Reportable Quantity : This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity : This material does not contain any components with a section 302 EHS TPQ.

SARA 304 Reportable Quantity : This material does not contain any components with a section 304 EHS RQ.

SARA 313 Components : The following components are subject to reporting levels established by SARA Title III, Section 313:

: Biphenyl - 92-52-4
 Anthracene - 120-12-7
 Phenanthrene - 85-01-8
 Naphthalene - 91-20-3

Clean Air Act

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Ozone-Depletion Potential : This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

- : Biphenyl - 92-52-4
- Phenanthrene - 85-01-8
- Anthracene - 120-12-7
- Naphthalene - 91-20-3

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

- : Biphenyl - 92-52-4

US State Regulations**Pennsylvania Right To Know**

- : Naphthalene - 91-20-3
- Biphenyl - 92-52-4
- Phenanthrene - 85-01-8
- Anthracene - 120-12-7

California Prop. 65 Components

: WARNING! This product contains a chemical known in the State of California to cause cancer.

Anthracene	120-12-7
Phenanthrene	85-01-8
Naphthalene	91-20-3

Notification status

Europe REACH	: Not in compliance with the inventory
Switzerland CH INV	: Not in compliance with the inventory
United States of America (USA) TSCA	: All chemical substances in this product are either listed as active on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.
Canada DSL	: All components of this product are on the Canadian DSL
Australia AICS	: Not in compliance with the inventory
New Zealand NZIoC	: Not in compliance with the inventory
Japan ENCS	: Not in compliance with the inventory
Korea KECI	: Not in compliance with the inventory
Philippines PICCS	: Not in compliance with the inventory

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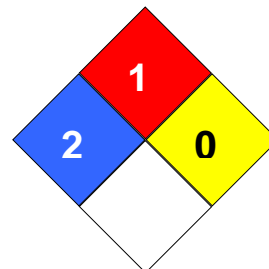
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China IECSC : Not in compliance with the inventory
 Taiwan TCSI : Not in compliance with the inventory

SECTION 16: Other information

NFPA Classification : Health Hazard: 2
 Fire Hazard: 1
 Reactivity Hazard: 0

**Further information**

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and	TSCA	Toxic Substance Control Act

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	New Chemical Substances		
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products, and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		