

**C20-24**

Version 1.11

Revision Date 2022-12-01

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

Product Name : C20-24

**Company**

: Qatar Chemical Company LTD (QChem)  
 Amwal Tower, Omar Al Mukhtar St,  
 Al-Dafna (Zone 61)  
 PO Box 24646  
 Doha, Qatar

SDS Requests: (+974) 4484-7110  
 Technical Information: (+974) 4476-7145  
 Responsible Party: Product Safety Group  
 Email: MSDSInquiry@qchem.com.qa

**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  
 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  
 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Austria: VIZ +43 1 406 43 43 (24 hours/day, 7 days/week)  
 Belgium: 070 245 245 (24 hours/day, 7 days/week)  
 Bulgaria: +359 2 9154 233  
 Croatia: +3851 2348 342 (24 hours/day, 7 days/week)  
 Cyprus: 1401  
 Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402  
 Denmark: Danish Poison Center (Gifflinjen): +45 8212 1212  
 Estonia: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Finland: 0800 147 111 09 471 977 (24 hours/day)  
 France: ORFILA number (INRS): + 33 (0) 1 45 42 59 59 (24 hours/day, 7 days/week)  
 Germany: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Greece: (0030) 2107793777 (24 hours/day, 7 days/week)  
 Hungary: +36-80-201-199 (24 hours/day, 7 days/week)  
 Iceland: 543 2222 (24 hours/day, 7 days/week)  
 Ireland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Italy: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Latvia: State Fire and Rescue Service, phone number: 112; Toxicology and Sepsis Clinic  
 Poisoning and Drug Information Center, Hipokrāta 2, Riga, Latvia, LV-1038, phone number +371  
 67042473. (24 hours.)  
 Liechtenstein: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Lithuania: +370 (85) 2362052

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Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)  
 Malta: +356 2395 2000  
 The Netherlands: NVIC: +31 (0)88 755 8000  
 Norway: 22 59 13 00 (24 hours/day, 7 days/week)  
 Poland: BIG +32.14.584545 (phone) or +32.14583516 (telefax)  
 Portugal: CIAV phone number: +351 800 250 250  
 Romania: +40213183606  
 Slovakia: +421 2 5477 4166  
 Slovenia: Phone number: 112  
 Spain: National Emergency Telephone Number of Spanish Poison Centre: +34 91 562 04 20 (24 hours/day, 7 days/week)  
 Sweden: 112 – ask for Poisons Information

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

**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**

: Aspiration hazard, Category 1

**Labeling**

Symbol(s) :



Signal Word :

: Danger

Hazard Statements :

: H304: May be fatal if swallowed and enters airways.

Precautionary Statements :

**Response:**  
 P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.  
 P331 Do NOT induce vomiting.  
**Storage:**  
 P405 Store locked up.  
**Disposal:**  
 P501 Dispose of contents/ container to an approved waste disposal plant.

**Carcinogenicity:****IARC**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**NTP**

No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

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**SECTION 3: Composition/information on ingredients**

Synonyms : NAO 20-24  
C20-24 Alpha Olefin Fraction

Molecular formula : UVCB

Component	CAS-No.	Weight %
Alkenes, C20-24 $\alpha$ -	93924-10-8	100
1-Eicosene	3452-07-1	35 - 55
1-Docosene	1599-67-3	25 - 45
1-Tetracosene	10192-32-2	10 - 26
1-Hexacosene	18835-33-1	0 - 2
1-Octadecene	112-88-9	0 - 0.1

**SECTION 4: First aid measures**

General advice : No hazards which require special first aid measures.

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 : Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. If symptoms persist, call a physician.

**SECTION 5: Firefighting measures**

Flash point : 183°C (361°F)  
Method: PMCC

Autoignition temperature : 239°C (462°F)

Unsuitable extinguishing media : High volume water jet.

Specific hazards during fire fighting : Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters : Wear self-contained breathing apparatus for firefighting if necessary.

Further information : Standard procedure for chemical fires. Use extinguishing

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measures that are appropriate to local circumstances and the surrounding environment.

Fire and explosion protection : Provide appropriate exhaust ventilation at places where dust is formed.

**SECTION 6: Accidental release measures**

Personal precautions : Use personal protective equipment. Avoid dust formation. Avoid breathing dust.

Environmental precautions : 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 : Keep in suitable, closed containers for disposal.

**SECTION 7: Handling and storage****Handling**

Advice on safe handling : 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.

Advice on protection against fire and explosion : Provide appropriate exhaust ventilation at places where dust is formed.

**Storage**

Requirements for storage areas and containers : Keep container tightly closed in a dry and well-ventilated place. Electrical installations / working materials must comply with the technological safety standards.

**SECTION 8: Exposure controls/personal protection****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 : If ventilation or other engineering controls are not adequate to maintain minimal oxygen content of 19.5% by volume under normal atmospheric pressure, a supplied-air NIOSH approved respirator may be appropriate. If exposure to harmful levels of airborne material may occur, a NIOSH approved respirator that

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provides protection may be appropriate, such as:. Air-Purifying Respirator for Organic Vapors, Dusts and Mists. A positive pressure, air-supplying respirator may be appropriate 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. Safety glasses.
- 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:. Protective suit. Safety shoes.
- 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 : Wax., solid
- Physical state : solid
- Color : White

**Safety data**

- Flash point : 183°C (361°F)  
Method: PMCC
- Lower explosion limit : No data available
- Upper explosion limit : No data available
- Oxidizing properties : no
- Autoignition temperature : 239°C (462°F)
- Molecular formula : UVCB
- Molecular weight : Varies
- pH : Not applicable
- Melting point/range : 35°C (95°F)
- Pour point : No data available

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Boiling point/boiling range	: 342-390°C (648-734°F)
Vapor pressure	: < 0.01 kPa at 65°C (149°F)
Relative density	: 0.8 at 15.6 °C (60.1 °F)
Density	: 815 kg/m <sup>3</sup> at 15°C (59°F)  792 kg/m <sup>3</sup> at 50°C (122°F)
Water solubility	: Soluble in hydrocarbon solvents; insoluble in water.
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 6.356 cSt at 40°C (104°F)
Relative vapor density	: Not applicable
Evaporation rate	: Not applicable

**SECTION 10: Stability and reactivity**

<b>Reactivity</b>	: Stable at normal ambient temperature and pressure.
<b>Chemical stability</b>	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
<b>Possibility of hazardous reactions</b>	
<b>Hazardous reactions</b>	: Further information: No decomposition if stored and applied as directed.
<b>Conditions to avoid</b>	: No data available.
<b>Materials to avoid</b>	: No data available.
<b>Other data</b>	: No decomposition if stored and applied as directed.

**SECTION 11: Toxicological information**

<b>C20-24</b>	
<b>Acute oral toxicity</b>	: LD50 Oral: > 5,000 mg/kg Species: Rat

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Sex: male and female  
Method: OECD Test Guideline 423  
Test substance: yes

**C20-24****Acute inhalation toxicity**

: LC50: 110.1 mg/LExposure time: 4 h  
Species: Rat  
Sex: male  
Test atmosphere: vapor  
Method: OECD Test Guideline 403  
Information given is based on data obtained from similar substances.

**C20-24****Acute dermal toxicity**

: LD50 Dermal: > 2,000 mg/kg  
Species: Rat  
Sex: male and female  
Method: OECD Test Guideline 402  
Information given is based on data obtained from similar substances.

**C20-24****Skin irritation**

: No skin irritation.

**C20-24****Eye irritation**

: No eye irritation. Information given is based on data obtained from similar substances.

**C20-24****Sensitization**

: Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

Alkenes, C20-24  $\alpha$ -

: Species: Rat, Male and female  
Sex: Male and female  
Application Route: oral gavage  
Dose: 100, 500, 1000 mg/kg/d  
Exposure time: 42-51 days  
Number of exposures: Daily  
NOEL: 1000 mg/kg bw/day  
Method: OECD Guideline 422

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Species: Rat, Male and female  
 Sex: Male and female  
 Application Route: oral gavage  
 Dose: 100, 500, 1000 mg/kg/d  
 Exposure time: 13 weeks  
 Number of exposures: 7 d/wk  
 NOEL: 1000 mg/kg bw/day  
 Method: OCED Guideline 408

Species: Rat, Male and female  
 Sex: Male and female  
 Application Route: Inhalation  
 Dose: 300, 1000, 3000 ppm  
 Exposure time: 13 weeks  
 Number of exposures: 5 d/wk, 6 hrs/d  
 NOEL: 3000 ppm  
 Method: OECD Guideline 413

## 1-Octadecene

Species: rat (female)  
 Application Route: oral gavage  
 Dose: 0, 100, 500, 1000 mg/kg/d  
 NOEL: 1,000 mg/kg  
 Method: OECD Guideline 422  
 Information given is based on data obtained from similar substances.

**Genotoxicity in vitro**Alkenes, C20-24  $\alpha$ -

: Test Type: Ames test  
 Metabolic activation: with and without metabolic activation  
 Result: negative

Test Type: Ames test  
 Metabolic activation: with and without metabolic activation  
 Result: negative

Test Type: Mammalian cell gene mutation assay  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Guideline 476  
 Result: negative

Test Type: Chromosome aberration test in vitro  
 Result: negative

## 1-Octadecene

Test Type: Ames test  
 Metabolic activation: with and without metabolic activation  
 Method: OECD Test Guideline 471  
 Result: negative

Test Type: Chromosome aberration test in vitro  
 Test system: rodent hepatocytes  
 Method: OECD Test Guideline 473  
 Result: negative

**Genotoxicity in vivo**Alkenes, C20-24  $\alpha$ -

: Test Type: Mouse micronucleus assay  
 Species: Mouse  
 Exposure time: 500, 1,000, 2,000 mg/kg

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Method: Mutagenicity (micronucleus test)  
Result: negative

Test Type: Mouse micronucleus assay  
Species: Mouse  
Exposure time: 1,000, 10,000, 25,000 ppm  
Method: Mutagenicity (micronucleus test)  
Result: negative

**Reproductive toxicity**Alkenes, C20-24  $\alpha$ -

: Species: Rat  
Sex: male and female  
Application Route: oral gavage  
Dose: 100, 500, 1000 mg/kg/day  
Number of exposures: Daily  
Test period: 41-55 days  
Method: OECD Guideline 422  
NOAEL Parent: 1000 mg/kg bw/day  
NOAEL F1: 1000 mg/kg bw/day

Species: Rat  
Sex: male and female  
Application Route: oral gavage  
Dose: 100, 500, 1000 mg/kg/d  
Number of exposures: Daily  
Test period: 42-51days  
Method: OECD Guideline 421  
NOAEL Parent: 1000 mg/kg bw/day  
NOAEL F1: 1000 mg/kg bw/day

1-Octadecene

Species: Rat  
Sex: male and female  
Application Route: oral gavage  
Dose: 0, 100, 500, 1000 mg/kg/d  
Method: OECD Guideline 421  
NOAEL Parent: 1,000 mg/kg  
NOAEL F1: 1,000 mg/kg  
Information given is based on data obtained from similar substances.

**C20-24****Aspiration toxicity**

: May be fatal if swallowed and enters airways.

**CMR effects**Alkenes, C20-24  $\alpha$ -

: Carcinogenicity: Not available  
Mutagenicity: Did not show mutagenic effects in animal experiments.  
Teratogenicity: Did not show teratogenic effects in animal experiments.  
Reproductive toxicity: No toxicity to reproduction

1-Octadecene

Carcinogenicity: Not available  
Mutagenicity: Tests on bacterial or mammalian cell cultures did not show mutagenic effects.  
Teratogenicity: Not available  
Reproductive toxicity: No toxicity to reproduction

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**Further information** : No data available.

**SECTION 12: Ecological information****Ecotoxicity effects**

**Toxicity to fish** : LL50: > 1,000 mg/l  
 Exposure time: 96 h  
 Species: Oncorhynchus mykiss (rainbow trout)  
 semi-static test Method: OECD Test Guideline 203  
 The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to daphnia and other aquatic invertebrates** : EL50: 1,000 mg/l  
 Exposure time: 48 h  
 Species: Daphnia magna (Water flea)  
 static test Method: OECD Test Guideline 202

**Toxicity to algae** : EL50: > 1,000 mg/l  
 Exposure time: 72 h  
 Species: Selenastrum capricornutum (algae)  
 static test Method: OECD Test Guideline 201  
 The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to bacteria**

1-Octadecene : NOEC: 3 mg/l  
 Exposure time: 120 h  
 Respiration inhibition

Biodegradability : This material is expected to be readily biodegradable.  
 Information given is based on data obtained from similar substances.

Elimination information (persistence and degradability)

Bioaccumulation : This material is not expected to bioaccumulate.

Mobility : No data available

Results of PBT assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Additional ecological information : No data available  
**Ecotoxicology Assessment**

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- Short-term (acute) aquatic hazard : This material is not expected to be harmful to aquatic organisms.
- Long-term (chronic) aquatic hazard : This material is not expected to be harmful to aquatic organisms.

**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 : Do not dispose of waste into sewer. 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)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S., (ALPHA OLEFIN FRACTION, C20-24) , 9, III

**IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S., (ALPHA OLEFIN FRACTION, C20-24) , 9, III (183°C)

**IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)**

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR

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TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, 9: NOT PERMITTED FOR TRANSPORT

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S., (ALPHA OLEFIN FRACTION, C20-24) , 9, III , (D)

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S., (ALPHA OLEFIN FRACTION, C20-24) , 9, III

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

NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

When shipment is offered for transport at or above 100°C it is regulated as:

UN3257, ELEVATED TEMPERATURE LIQUID, N.O.S., (ALPHA OLEFIN FRACTION, C20-24) , 9, III

<b>Other information</b>	:	<b>OLEFINS (C13 +, all isomers), S.T. 2, Cat.Y</b>
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**Maritime transport in bulk according to IMO instruments**

**SECTION 15: Regulatory information****National legislation**

**SARA 311/312 Hazards** : Aspiration hazard

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

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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 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

**Clean Air Act**

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).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

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).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

**US State Regulations****Pennsylvania Right To Know**

: Alkenes, C20-24  $\alpha$ - 93924-10-8  
 1-Eicosene - 3452-07-1  
 1-Docosene - 1599-67-3  
 1-Tetracosene - 10192-32-2

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California Prop. 65 Components : This product, as shipped, does not contain any carcinogens or reproductive toxins presently known by the State of California to cause cancer or reproductive toxicity at a level of exposure subject to the requirements of California Proposition 65.

**Notification status**

Europe REACH : This product is in full compliance according to REACH regulation 1907/2006/EC.

United States of America (USA) TSCA : On or in compliance with the active portion of the TSCA inventory

Canada DSL : On the inventory, or in compliance with the inventory

Australia AICS : On the inventory, or in compliance with the inventory

New Zealand NZIoC : This substance may be used as a component in a product covered by a group standard but it is not approved for use as a chemical in its own right

Japan ENCS : On the inventory, or in compliance with the inventory

Korea KECI : A substance(s) in this product was not registered, notified to be registered, or exempted from registration by QChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance or the exported amount does not exceed the minimum threshold quantity of the non-registered substance(s).

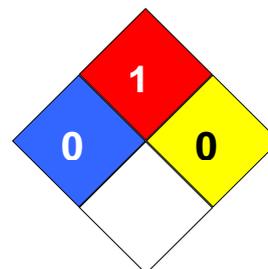
Philippines PICCS : On the inventory, or in compliance with the inventory

China IECSC : On the inventory, or in compliance with the inventory

Taiwan TCSI : On the inventory, or in compliance with the inventory

**SECTION 16: Other information**

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

**Further information**

Legacy SDS Number : QCHEM016

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

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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 New Chemical Substances	TSCA	Toxic Substance Control Act
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%	ATE	Acute toxicity estimate