

Version 1.16 Revision Date 2025-04-02

MSDS number: AA00974-0000000094

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

Product Name : AlphaPlus® 1-Octene

Material : 1128499, 1117428, 1064097, 1021765, 1015426, 1037082

Recommended use of the

product

: Commercial Product

Restrictions on use : None known.

Address : Chevron Phillips Chemical Company LP

Normal Alpha Olefins (NAO) 10001 Six Pines Drive The Woodlands, TX 77380

Address : CHEVRON PHILLIPS CHEMICALS ASIA PTE. LTD.

C/O DONG WOO CORPORATION

#B-2601, JEONGJAIL-RO,

BUNDANG-GU, SEONGNAMI-SI,

GYEONGGI-DO,13557

SOUTH KOREA

Telephone no.: +612-9186-1132

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

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Czech Republic: Toxicological Information Center +420 224 919 293, +420 224 915 402

Denmark: Danish Poison Center (Giftlinjen): +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: POISON CENTER MILÂN – Azienda Ospedaliera Niguarda Ca` Grande Tel. +39 02 66101029; POISON CENTER ROME – Policlinico "Agostino Gemelli", Servizio di tossicologia clinica Tel. +39 06 3054343; POISON CENTER ROME – Ospedale Pediatrico Bambino Gesù Tel. +39 06 68593726; POISON CENTER ROME – Policlinico "Umberto I" Tel. +39 06 4997 8000; POISON CENTER FOGGIA – Azienda Ospedaliera Universitaria Riuniti Tel. +39 0881 732326; POISON CENTER NAPLES – Azienda Ospedaliera "Antonio Cardarelli" Tel. +39 081 7472870; POISON CENTER FLORENCE – Azienda Ospedaliera universitaria Careggi Tel. +39 055 7947819; POISON CENTER PAVIA – IRCCS Fondazione Salvatore Maugeri Tel. +39 0382 24444; POISON CENTER BERGAMO – Azienda Ospedaliera "Papa Giovanni XXIII" Tel. 800 883 300; POISON CENTER VERONA – Azienda Ospedaliera Universitaria integrata Tel. 800 011 858:

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

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

Appointees : 회사명: 리이치24시코리아㈜.

주소: 서울특별시 강남구 강남대로 94길 34,4층

전화: +82-02-6245-1610

SECTION 2: Hazards identification

Hazard classification

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Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2020-130)

Classification

Flammable liquids, Category 2
Germ cell mutagenicity, Category 2
Aspiration hazard, Category 1

Short-term (acute) aquatic hazard, Category 1 Long-term (chronic) aquatic hazard, Category 1

Warning label elements including precautionary statements

Symbol(s) :







Signal Word : Danger

Hazard Statements : H225: Highly flammable liquid and vapor.

H304: May be fatal if swallowed and enters airways. H341: Suspected of causing genetic defects.

H400: Very toxic to aquatic life.

H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements : Prevention:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been

read and understood.

P210: Keep away from heat/ sparks/ open flames/ hot

surfaces. No smoking.

P233: Keep container tightly closed.

P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ ventilating/ lighting/

equipment.

P242: Use only non-sparking tools.

P243: Take precautionary measures against static discharge.

P273: Avoid release to the environment.

P280: Wear protective gloves/ protective clothing/ eye

protection/ face protection.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON

CENTER or doctor/ physician.

P303 + P361 + P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/

shower.

P308 + P313: IF exposed or concerned: Get medical advice/

attention.

P331: Do NOT induce vomiting.

P370 + P378: In case of fire: Use dry sand, dry chemical or

alcohol-resistant foam to extinguish.

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P391: Collect spillage.

Storage:

P403 + P235: Store in a well-ventilated place. Keep cool.

P405: Store locked up.

Disposal:

P501: Dispose of contents and container according to wastes

control act.

Other hazards which do not result in classification

: None

SECTION 3: Composition/information on ingredients

Synonyms : Octene-n-1

Octene-1 (C8) AlphaPlus™ NAO 8

C8H16

Molecular formula : C8H16

SECTION 4: First aid measures

General advice : Move out of dangerous area. Show this material safety data

sheet to the doctor in attendance. Material may produce a serious, potentially fatal pneumonia if swallowed or vomited.

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.

In case of skin contact : If skin irritation persists, call a physician. If on skin, rinse well

with water. If on clothes, remove clothes.

If inhaled : Consult a physician after significant exposure. If unconscious,

place in recovery position and seek medical advice.

If swallowed : Keep respiratory tract clear. Never give anything by mouth to

an unconscious person. If symptoms persist, call a physician.

Take victim immediately to hospital.

Other cautions for Doctors

Symptoms : No information available.

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Risks : No information available.

Treatment : No information available.

SECTION 5: Firefighting measures

Flash point : 13°C (55°F)

Method: Tag closed cup

Autoignition temperature : 221°C (430°F)

Suitable extinguishing

media

: Alcohol-resistant foam. Carbon dioxide (CO2). Dry chemical.

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. For safety reasons in case

of fire, cans should be stored separately in closed containments. Use a water spray to cool fully closed

containers.

Fire and explosion

protection

: Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge

(which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot

surfaces and sources of ignition.

Hazardous decomposition

products

: Carbon oxides.

SECTION 6: Accidental release measures

Personal precautions : Use personal protective equipment. Ensure adequate

ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low

areas.

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.

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Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

SECTION 7: Handling and storage

Handling

Advice on safe handling

Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient. Review all operations, which have the potential to generating and accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106 "Flammable and Combustible Liquids"; National Fire Protection Association (NFPA 77), "Recommended Practice on Static Electricity"; and/or the American Petroleum Institute (API) Recommended Practice 2003, "Protection Against Ignitions Arising Out of Static, Lightning, and stray Currents". Avoid formation of aerosol. 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. Take precautionary measures against static discharges. Provide sufficient air exchange and/or exhaust in work rooms. Open drum carefully as content may be under pressure. Dispose of rinse water in accordance with local and national regulations.

Advice on protection against fire and explosion

Do not spray on a naked flame or any incandescent material. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition.

Secure storage

Requirements for storage areas and containers

: No smoking. 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.

Uses advised against

None known.

Specific Use : Commercial Product

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SECTION 8: Exposure controls/personal protection

Chemical exposure standards, biological exposure standards, etc.

Adequate ventilation to control airborned 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 provides protection may be appropriate, such as:. Air-Purifying Respirator for Organic Vapors. 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.

Eye protection : Eye wash bottle with pure water. Tightly fitting safety goggles.

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.

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:. Flame retardant antistatic protective clothing. Workers should wear antistatic

footwear.

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

Physical state : liquid

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Color : Clear, colorless Odor : No data available

No information available.

Odor Threshold : No data available

No data available

pH : No data available

Pour point : Not applicable

Melting point/freezing point -102°C (-152°F)

Boiling point/boiling range : 121°C (250°F)

Flash point : 13°C (55°F)

Method: Tag closed cup

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Lower explosion limit : 0.7 %(V)

Upper explosion limit : 6.8 %(V)

Vapor pressure : 1.75 kPa

at 20°C (68°F)

15.30 kPa at 65°C (149°F)

Solubility : Soluble in hydrocarbon solvents; insoluble in water.

Relative density : 0.72

at 15.6 °C (60.1 °F)

0.723

at 10 °C (50 °F)

0.715

at 20 °C (68 °F)

0.690

at 50 °C (122 °F)

0.686

at 55 °C (131 °F)

Density : 719 kg/m3

at 15°C (59°F)

710 kg/m3 at 20°C (68°F)

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690 kg/m3 at 50°C (122°F)

Vapor density : 3.9

(Air = 1.0)

Partition coefficient: n-

octanol/water

: No data available

Autoignition temperature : 221°C (430°F)

Decomposition temperature : No data available

Viscosity, kinematic : 0.38 cSt

at 40°C (104°F)

Molecular weight : 112.24 g/mol

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 : Hazardous reactions: Hazardous polymerization does not

occur.

Further information: No decomposition if stored and applied as

directed.

Hazardous reactions: Vapors may form explosive mixture with

air.

Conditions to avoid : Heat, sparks, fire, and oxidizing agents.

Materials to avoid : May react with oxygen and strong oxidizing agents, such as

chlorates, nitrates, peroxides, etc.

Thermal decomposition : No data available

Hazardous decomposition

products

: Carbon oxides

Other data : No decomposition if stored and applied as directed.

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SECTION 11: Toxicological information

Information on exposure routes

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Skin corrosion or irritation : Mild skin irritation

Repeated or prolonged contact with the mixture may cause removal of natural fat from the skin resulting in desiccation of

the skin.

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Eye corrosion or irritation :

: No eye irritation.

Vapors may cause irritation to the eyes, respiratory system

and the skin.

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Respiratory Sensitization

: No data available

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Skin sensitization

Did not cause sensitization on laboratory animals.

Specific Target Organ
Toxicity (Single Exposure)

Not classified due to data which are conclusive although

insufficient for classification.

Specific Target Organ Toxicity (Repeated

Exposure)

Not classified due to data which are conclusive although

insufficient for classification.

AlphaPlus® 1-Octene

Aspiration toxicity

: May be fatal if swallowed and enters airways.

AlphaPlus® 1-Octene

Further information

: Symptoms of overexposure may be headache, dizziness,

tiredness, nausea and vomiting. Concentrations substantially above the TLV value may cause narcotic effects. Solvents

may degrease the skin.

SECTION 12: Ecological information

Ecological Toxicity

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Persistence and degradabilityPersistence

and degradability
Other adverse effects

: This material is expected to be readily biodegradable.

: Very toxic to aquatic life with long lasting effects.

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal., Very toxic to aquatic life

with long lasting effects.

Ecotoxicology Assessment

Short-term (acute) aquatic

hazard

: Very toxic to aquatic life.

Long-term (chronic) aquatic

hazard

: Very 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.

Disposal method : 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.

Disposal precaution : Empty remaining contents. Dispose of as unused product.

Do not re-use empty containers. Do not burn, or use a cutting

torch on, the empty drum.

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.

UN Number	:	UN3295
UN Product Shipping Name	:	Hydrocarbons, liquid, n.o.s.
Hazard Class		3
Packing Group		II - Hazardous Properties

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Marine Pollutant	:	Yes
Special Safety Measures on Mode of Transport	:	No data available

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, (13°C), MARINE POLLUTANT, (1-OCTENE)

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II

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

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, (D/E), ENVIRONMENTALLY HAZARDOUS, (1-OCTENE)

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

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (1-OCTENE)

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

UN3295, HYDROCARBONS, LIQUID, N.O.S., 3, II, ENVIRONMENTALLY HAZARDOUS, (1-OCTENE)

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Other information : 3

Maritime transport in bulk according to IMO instruments

SECTION 15: Regulatory information

National legislation

Regulation under the Occupational Safety and Health Act

A Material Safety Datasheet (MSDS) has to be prepared and provided for this product according to article 41 of ISHA.

Regulation		Chemical name	Threshold limits
Harmful Substances Prohibited from Manufacturing	• •	Not applicable	
		Not applicable	
Harmful Substances Required Permission for Manufacture	:	Not applicable	
		Not applicable	

Act on the Registration and Evaluation, etc. of Chemical Substances, Chemicals Control Act

Act on the Registration and Evaluation, etc. of offernical oubstances, offernicals control Act				
Regulation		Chemical name	Threshold	
			limits	
Toxic Chemicals	:	Not applicable		
		Not applicable		
Prohibited Chemicals	:	Not applicable		
		Not applicable		
Restricted Chemicals	:	Not applicable		
		Not applicable		
Toxic Release Inventory	:	Not applicable		
		Not applicable		

Dangerous Substances Safety Management Act

Dangerous Substances : Flammable liquids, Type 1 petroleums, Water insoluble liquid

Safety Management Act

Regulations by the Waste : 1-Octene: Designated Waste; 2-Ethyl-1-Hexene:

Management Act Designated Waste

Regulations by other domestic and foreign laws

Europe REACH : This product is in full compliance according to REACH

regulation 1907/2006/EC.

Switzerland CH INV : On the inventory, or in compliance with the inventory United States of America (USA) : On or in compliance with the active portion of the

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TSCA TSCA inventory

Canada DSL : All components of this product are on the Canadian

DSL

Australia AIIC : On the inventory, or in compliance with the inventory Japan ENCS : On the inventory, or in compliance with the inventory New Zealand NZIoC : On the inventory, or in compliance with the inventory Philippines PICCS : On the inventory, or in compliance with the inventory Korea KECI : A substance(s) in this product was not registered,

A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPCham according to K REACH regulations.

by CPChem 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).

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

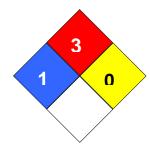
Other regulations : No data available

SECTION 16: Other information

Source of data	:	Korea. GHS based classification	
Date of initial writing	:	2021-03-15	
Revision number	:	1	
Last revision date	:	2025-04-02	

NFPA Classification : Health Hazard: 1

Fire Hazard: 3 Reactivity Hazard: 0



Other information

None.

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

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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%			
AIIC	Australian Inventory of Industrial Chemicals	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			

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