

Version 1.11 Revision Date 2023-11-27

MSDS number: AA00974-0000000400

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

Product Name : AlphaPlus® 1-Tetradecene

Material : 1128492, 1064098, 1037032, 1037031

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)

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Cyprus: 1401

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: 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

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

Standards for classification and labeling of chemical substances and material safety data sheet (ministry of employment and labor public notice No. 2023-9)

Classification

: Skin corrosion/irritation, Category 2 Aspiration hazard, Category 1

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Long-term (chronic) aquatic hazard, Category 4

Warning label elements including precautionary statements

Symbol(s) :

>



Signal Word : Danger

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

H315: Causes skin irritation.

H413: May cause long lasting harmful effects to aquatic life.

Precautionary Statements : **Prevention**:

P264: Wash the contact area thoroughly after handling.

P273: Avoid release to the environment.

P280: Wear protective gloves.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON

CENTER or doctor/ physician.

P302 + P352: IF ON SKIN: Wash with plenty of soap and

water.

P321: Specific treatment (see supplemental first aid

instructions on this label).

P331: Do NOT induce vomiting.

P332 + P313: If skin irritation occurs: Get medical advice/

attention.

P362 + P364: Take off contaminated clothing and wash it

before reuse. Storage:

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 : Tetradec-1-ene (C14H28)

1-Tetradecene (C14H28) NAO 14 (C14H28)

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Molecular formula : C14H28

Molecular formula	: C14H28				
Common name	Synonyms	CAS-No. Concentrat		on KECI Number	
1-Tetradecene	tetradec-1-ene	1120-36-1	94%	KE-33369	
2-Butyl-1-Decene	Tridecane, 5- methylene-	51655-65-3	2%		
2-Ethyl-1-Dodecene	Tridecane, 3- methylene-	19780-34-8	2%		
2-Hexyl-1-Octene	Tridecane, 7- methylene-	19780-80-4	1%		
Related Materials			1%		
1					

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.

If inhaled : If unconscious, place in recovery position and seek medical

advice. If symptoms persist, call a physician.

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.

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Other cautions for Doctors

Symptoms : No data available.

Risks : No data available.

Treatment : No data available.

SECTION 5: Firefighting measures

Flash point : 107°C (225°F)

Autoignition temperature : 235°C (455°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

measures that are appropriate to local circumstances and the

surrounding environment.

Fire and explosion

protection

: Normal measures for preventive fire protection.

SECTION 6: Accidental release measures

Personal precautions : Use personal protective equipment. Ensure adequate

ventilation.

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. For personal protection see

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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

: Normal measures for preventive fire protection.

Secure storage

Requirements for storage areas and containers

: Keep container tightly closed in a dry and well-ventilated place. Observe label precautions. Electrical installations / working materials must comply with the technological safety standards.

Uses advised against

: None known.

Specific Use : Commercial Product

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 Dusts and Mists / P100. 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

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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 according to the amount and

concentration of the substance and the task performed at the work place. Appropriate PPE may include:. Protective suit.

Safety shoes.

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

Physical state : liquid Color : Colorless

Odor : No data available
Odor Threshold : No data available

pH : Not applicable

Melting point/range : -13.9°C (7.0°F)

Freezing point No data available

Boiling point/boiling range : 251°C (484°F)

Flash point : 107°C (225°F)

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Lower explosion limit : > 0.5 %(V)

Upper explosion limit : < 5.4 %(V)

Vapor pressure : 0.01 MMHG

at 25°C (77°F)

< 0.10 kPa at 65°C (149°F)

Solubility : Soluble in hydrocarbon solvents; insoluble in water.

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Relative density : 0.77

at 15.6 °C (60.1 °F)

0.779

at 10 °C (50 °F)

0.771

at 20 °C (68 °F)

0.750

at 50 °C (122 °F)

at 55 °C (131 °F)

Density : 775 kg/m3

at 15°C (59°F)

774 kg/m3 at 25°C (77°F)

750 kg/m3 at 50°C (122°F)

Vapor density : 6.8

(Air = 1.0)

Partition coefficient: n-

Viscosity, kinematic

octanol/water

: No data available

Autoignition temperature : 235°C (455°F)

: 2.61 cSt at 20°C (68°F)

: 196.42 g/mol Molecular weight

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.

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

chlorates, nitrates, peroxides, etc.

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

SECTION 11: Toxicological information

Information on exposure routes

AlphaPlus® 1-Tetradecene

Acute oral toxicity : LD50: > 5,000 mg/kg

Species: Rat

Sex: male and female

Information given is based on data obtained from similar

substances.

AlphaPlus® 1-Tetradecene

Acute inhalation toxicity : LC50: > 5 mg/l

Exposure time: 4 h Species: Rat

Test atmosphere: dust/mist Method: Acute toxicity estimate

Information given is based on data obtained from similar

substances.

Not classified due to data which are conclusive although

insufficient for classification.

AlphaPlus® 1-Tetradecene

Acute dermal toxicity : LD50 Dermal: > 2,020 mg/kg

Species: Rabbit Sex: male and female

Information given is based on data obtained from similar

substances.

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Skin corrosion or 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

Information given is based on data obtained from similar

substances.

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Respiratory Sensitization: No data available.

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Skin sensitization

Did not cause sensitization on laboratory animals., largely based

on animal evidence

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Germ cell mutagenicity (in vitro)

1-Tetradecene : Test Type: Ames test

Metabolic activation: with and without metabolic activation Method: Mutagenicity (Escherichia coli - reverse mutation

assay)

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

Method: OECD Guideline 473

Result: negative

Germ cell mutagenicity (in vivo)

1-Tetradecene : Test Type: Micronucleus test

Species: Mouse

Method: Mutagenicity (micronucleus test)

Result: negative

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-Tetradecene Aspiration toxicity

: May be fatal if swallowed and enters airways.

Substances known to cause human aspiration toxicity hazards or to be regarded as if they cause human aspiration toxicity

hazard.

CMR effects

1-Tetradecene : Mutagenicity: Tests on bacterial or mammalian cell cultures

did not show mutagenic effects.

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Reproductive toxicity: No toxicity to reproduction

Reproductive toxicity

1-Tetradecene : Species: Rat

Sex: male

Application Route: Oral diet Dose: 0, 100, 500, 1000 mg/kg Exposure time: 43-47 days Method: OECD Guideline 422 NOAEL Parent: 1,000 mg/kg NOAEL F1: 1,000 mg/kg

Species: Rat Sex: female

Application Route: Oral diet Dose: 0, 100, 500, 1000 mg/kg Exposure time: 46-47 days Method: OECD Guideline 422 NOAEL Parent: 1,000 mg/kg NOAEL F1: 1,000 mg/kg

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Further information : Solvents may degrease the skin.

SECTION 12: Ecological information

Ecological Toxicity

Toxicity to fish

1-Tetradecene : LL50: > 1,000 mg/l

Exposure time: 96 h

Species: Oncorhynchus mykiss (rainbow trout)

semi-static test Test substance: yes 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

1-Tetradecene : EL50: > 1,000 mg/l

Exposure time: 48 h

Species: Daphnia magna (Water flea)

Test substance: yes

Method: OECD Test Guideline 202

The product has low solubility in the test medium. An aqueous

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dispersion was tested.

Toxicity to algae

1-Tetradecene : EL50: > 1,000 mg/l

Exposure time: 96 h

Species: Selenastrum capricornutum (algae)

static test Test substance: yes Method: OECD Test Guideline 201

The product has low solubility in the test medium. An aqueous

dispersion was tested.

Persistence and degradabilityPersistence

and degradability

: According to the results of tests of biodegradability this product is considered as being readily biodegradable.

Bioaccumulative : Due to the distribution coefficient n-octanol/water,

accumulation in organisms is possible.

Mobility : No data available

Results of PBT assessment

1-Tetradecene

: Non-classified PBT substance, Non-classified vPvB substance

Other adverse effects : No data available

Ecotoxicology Assessment

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.

Disposal method : 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.

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Disposal precaution : 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.

UN Number	:	not regulated
UN Product Shipping Name	:	Not regulated as a dangerous good
Hazard Class		Not applicable
Packing Group	:	Not applicable
Marine Pollutant	:	Not applicable
Special Safety Measures on Mode of Transport	:	No data available

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)

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

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)

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

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)

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

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

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

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

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

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.

Other information :	OLEFINS (C13 +, all isomers), S.T. 2, Cat.Y
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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) for this product is not required according to article 41 of the ISHA.

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

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

Regulation		Chemical name	Threshold limits
Toxic Chemicals	:	Not applicable	
Prohibited Chemicals	:	Not applicable	
Restricted Chemicals	:	Not applicable	
Toxic Release Inventory	:	Not applicable	

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Dangerous Substances Safety Management Act

Dangerous Substances : Flammable liquids, Type 3 petroleums, Water insoluble liquid

Safety Management Act

Regulations by the Waste

Management Act 1- Tetradecene: 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

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
New Zealand NZIoC : On the inventory, or in compliance with the inventory
Japan ENCS : 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 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).

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

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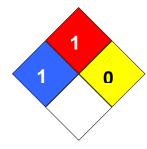
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SECTION 16: Other information

Source of data	:	Korea. GHS based classification
Date of initial writing	:	2023-10-23
Revision number	:	1
Last revision date	:	2023-11-27

NFPA Classification : +

: Health Hazard: 1 Fire Hazard: 1 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 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	LD50	Lethal Dose 50%			
	Government Industrial Hygienists					
AIIC	Australian Inventory of Industrial	LOAEL	Lowest Observed Adverse Effect			
	Chemicals		Level			
DSL	Canada, Domestic Substances	NFPA	National Fire Protection Agency			
	List					
NDSL	Canada, Non-Domestic	NIOSH	National Institute for Occupational			
	Substances List		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			

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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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