

**AlphaPlus® 1-Hexadecene**

Version 1.13

Revision Date 2023-10-23

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

Product Name : AlphaPlus® 1-Hexadecene  
Material : 1128490, 1076762, 1037049, 1037048

**Company** : Chevron Phillips Chemical Company LP  
Normal Alpha Olefins (NAO)  
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  
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  
Luxembourg: (+352) 8002 5500 (24 hours/day, 7 days/week)

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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**  
**GHS Classification and labelling according to JIS Z7252-2014 and JIS Z7253-2012 (GHS 2011)**

**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/ doctor.  
 P331: Do NOT induce vomiting.  
**Storage:**  
 P405: Store locked up.  
**Disposal:**  
 P501: Dispose of contents/ container to an approved waste disposal plant.

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

Synonyms : NAO 16  
 1-Hexadecene  
 (C16 H32)

Molecular formula : C16H32

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Chemical name	CAS-No.	Concentration	ENCS/ISHL number
1-Hexadecene	629-73-2	93%	2-27
2-Butyl-1-Dodecene	115146-98-0	2%	
2-Ethyl-1-Tetradecene	56919-55-2	2%	
2-Hexyl-1-Decene	13043-55-5	2%	2-27

**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.
- 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 induce vomiting. 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 : 132°C (270°F)  
Method: PMCC
- Autoignition temperature : 240°C (464°F)
- Unsuitable extinguishing media : High volume water jet.
- Specific hazards during fire fighting : Standard procedure for chemical fires.
- 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.

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Hazardous decomposition products : No data available.

**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 or spray mist. 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 : Normal measures for preventive fire protection.

**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.

**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 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.

- 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:. 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 : Clear, colorless

**Safety data**

- Flash point : 132°C (270°F)  
Method: PMCC
- Lower explosion limit : 0.5 %(V)
- Upper explosion limit : 5.8 %(V)
- Oxidizing properties : no
- Autoignition temperature : 240°C (464°F)
- Molecular formula : C16H32
- Molecular weight : 224.48 g/mol
- pH : Not applicable
- Melting point/range : 4°C (39°F)
- Freezing point : 4°C (39°F)

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Pour point	No data available
Boiling point/boiling range	: 285°C (545°F)
Vapor pressure	: 0.00 MMHG at 25°C (77°F)  < 0.01 kPa at 65°C (149°F)
Relative density	: 0.78 at 15.6 °C (60.1 °F)
Density	: 785 kg/m3 at 15°C (59°F)  780 kg/m3 at 20°C (68°F)  760 kg/m3 at 50°C (122°F)
Water solubility	: Soluble in hydrocarbons; insoluble in water
Partition coefficient: n-octanol/water	: No data available
Viscosity, kinematic	: 3.83 cSt at 20°C (68°F)
Relative vapor density	: 7.72 (Air = 1.0)
Evaporation rate	: No data available

**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>	: May react with oxygen and strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

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**Hazardous decomposition products** : No data available

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

**SECTION 11: Toxicological information****Acute oral toxicity**

1-Hexadecene : LD50: 10 g/kg  
Species: Rat  
Sex: male and female  
Method: OECD Test Guideline 401  
Test substance: yes

**Acute inhalation toxicity**

1-Hexadecene : LC50: > 8.5 mg/Exposure time: 1 h  
Species: Rat  
Sex: male  
Test atmosphere: dust/mist

**Acute dermal toxicity**

1-Hexadecene : LD50: > 2020 mg/kg  
Species: Rabbit  
Sex: male and female  
Information given is based on data obtained from similar substances.

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Skin 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.

**AlphaPlus® 1-Hexadecene  
Eye irritation**

: Vapors may cause irritation to the eyes, respiratory system and the skin.

**Sensitization**

1-Hexadecene : Did not cause sensitization on laboratory animals.

**Repeated dose toxicity**

1-Hexadecene : Species: Rat, Male and female  
Sex: Male and female  
Application Route: oral gavage  
Dose: 100, 500, or 1000 mg/kg/day  
Exposure time: 42- 51 days  
Number of exposures: Daily  
NOEL: 1000 mg/kg bw/day  
Method: OECD Guideline 422  
Information given is based on data obtained from similar substances.

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Species: Rat, male  
 Sex: male  
 Application Route: oral gavage  
 Dose: 10, 101, 1010, 3365 mg/kg/day  
 Exposure time: 4 weeks  
 Number of exposures: 7 days/week  
 NOEL: 101 mg/kg bw/day  
 Method: OECD Test Guideline 407  
 Target Organs: Stomach  
 Information given is based on data obtained from similar substances.

Species: Rat, female  
 Sex: female  
 Application Route: oral gavage  
 Dose: 10, 101, 1010, 3365 mg/kg/day  
 Exposure time: 4 weeks  
 Number of exposures: 7 days/week  
 NOEL: 1010 mg/kg bw/day  
 Method: OECD Test Guideline 407  
 Information given is based on data obtained from similar substances.

Species: Rat, Male and female  
 Sex: Male and female  
 Application Route: oral gavage  
 Dose: 100, 500, 1000 mg/kg/day  
 Exposure time: 13 weeks  
 Number of exposures: 7 days/week  
 NOEL: 1000 mg/kg bw/day  
 Information given is based on data obtained from similar substances.

Species: Rat, Male and female  
 Sex: Male and female  
 Application Route: Inhalation  
 Dose: 300, 1000, 3000 ppm  
 Exposure time: 13 weeks  
 Number of exposures: 6 hrs/day, 5 days/week  
 NOEL: 3000 ppm  
 Information given is based on data obtained from similar substances.

**Genotoxicity in vitro**

1-Hexadecene

: 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  
 Result: negative

Test Type: Chromosome aberration test in vitro  
 Result: negative

**Genotoxicity in vivo**



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1-Hexadecene : Test Type: Micronucleus test  
 Species: Mouse  
 Dose: 1,000, 10,000, 25,000 ppm  
 Result: negative

**Reproductive toxicity**

1-Hexadecene : Species: Rat  
 Sex: female  
 Application Route: oral gavage  
 Dose: 100, 500, 1000 mg/kg/day  
 Number of exposures: Daily  
 Test period: 41 to 55 days  
 Method: OECD Guideline 421  
 NOAEL Parent: 1000 mg/kg bw/day  
 NOAEL F1: 1000 mg/kg bw/day  
 Information given is based on data obtained from similar substances.

Species: Rat  
 Sex: male and female  
 Application Route: oral gavage  
 Dose: 100, 500, 1000 mg/kg/day  
 Number of exposures: Daily  
 Test period: 42- 51days  
 Method: OECD Guideline 422  
 NOAEL Parent: 1000 mg/kg bw/day  
 NOAEL F1: 1000 mg/kg bw/day  
 Information given is based on data obtained from similar substances.

**AlphaPlus® 1-Hexadecene  
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-Hexadecene : Carcinogenicity: Not classifiable as a human carcinogen.  
 Mutagenicity: Did not show mutagenic effects in animal experiments.  
 Teratogenicity: Did not show teratogenic effects in animal experiments.  
 Reproductive toxicity: No toxicity to reproduction

**AlphaPlus® 1-Hexadecene  
Further information**

: Solvents may degrease the skin.

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

1-Hexadecene : LL50: > 1000 mg/L  
 Exposure time: 96 h  
 Species: Oncorhynchus mykiss (rainbow trout)

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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-Hexadecene : EL50: < 1000 mg/L  
 Exposure time: 48 h  
 Species: Daphnia magna (Water flea)  
 static test Method: OECD Test Guideline 202  
 The product has low solubility in the test medium. An aqueous dispersion was tested.

**Toxicity to algae**

1-Hexadecene : EC50: > 1000 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.

**Biodegradability**

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

**Bioaccumulation**

1-Hexadecene : Due to the distribution coefficient n-octanol/water, accumulation in organisms is possible.

**Mobility**

1-Hexadecene : No data available

**Results of PBT assessment**

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

**Additional ecological information**

: This material is not expected to be harmful to aquatic organisms.

No data available

**Ecotoxicology Assessment**

Short-term (acute) aquatic hazard : No toxicity at the limit of solubility.

**Long-term (chronic) aquatic hazard**

1-Hexadecene : This material is not expected to be harmful to aquatic organisms.

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**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.

**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.

**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)**

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

<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****Poisonous and Deleterious Substances Control Law**

: Not applicable

**Industrial Safety and Health Law**

Substances Subject to be : Not applicable

Notified Names

Enforcement Order of the :

Industrial Safety and Health

Law - Attached table 1

(Dangerous Substances)

Harmful Substances Required : Not applicable

Permission for Manufacture

Hazardous Substances : Not applicable

Subject to Labeling

Requirements

Ordinance on Prevention of : Not applicable

Organic Solvent Poisoning

Ordinance on Prevention of : Not applicable

Lead Poisoning

Harmful Substances : Not applicable

Prohibited from Manufacture

Ordinance on Prevention of : Not applicable

Hazards Due to Specified

Chemical Substances

Ordinance on Prevention of : Not applicable

Tetraalkyl Lead Poisoning

: Not applicable

: Not applicable

Substances Prevented From : Not applicable

Impairment of Health

Listed

**Chemical Substance Control Law**

: Not applicable for Specified Chemical Substance, Monitoring Chemical Substance and Priority Assessment Chemical Substance.

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**Act on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof**

: Not applicable

**Other regulations**

Fire Service Law : Flammable liquids  
Type 3 petroleums  
Hazardous rank III

High Pressure Gas Safety Act : Not applicable

Explosive Control Law : Not applicable

Vessel Safety Law : Not regulated as a dangerous good

Aviation Law : Not regulated as a dangerous good

**Notification status**

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) 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 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, 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

**SECTION 16: Other information****Further information**

Legacy SDS Number : PE0021

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.

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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%
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