

# Marlex® 9659 Polyethylene

#### Version 1.6

Revision Date 2019-10-15

According to Regulation (EC) No. 1907/2006, Regulation (EC) No. 2015/830

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

#### 1.1

#### **Product information**

Product Name	: Marlex® 9659 Polyethylene
Material	: 1039169, 1039185, 1039177, 1039171, 1039193, 1040943,
	1040944, 1039203, 1039195, 1039187, 1042808, 1039179

#### **EC-No.Registration number**

Chemical name	CAS-No. EC-No. Index No.	Legal Entity Registration number
Ethylene	74-85-1 200-815-3 601-010-00-3	Chevron Phillips Chemical Company LP 01-2119462827-27-0004

#### 1.3

Details of the supplier of the	Details of the supplier of the safety data sheet				
Company	: Chevron Phillips Chemical Company LP 10001 Six Pines Drive The Woodlands, TX 77380				
Local	<ul> <li>Chevron Phillips Chemicals International N.V.</li> <li>Airport Plaza (Stockholm Building)</li> <li>Leonardo Da Vincilaan 19</li> <li>1831 Diegem</li> <li>Belgium</li> </ul>				
	SDS Requests: (800) 852-5530 Technical Information: (832) 813-4862 Responsible Party: Product Safety Group Email:sds@cpchem.com				
1.4					
Emergency telephone:					
Health: 866.442.9628 (North Ameri	ca)				
SDS Number:10000000632	1/11				

# Marlex® 9659 Polyethylene

Revision Date 2019-10-15

Version 1.6

	1.832.813.4984 (International) <b>Transport</b> : CHEMTREC 800.424.9300 or 703.527.3887(int'l) Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090 EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax) Mexico CHEMTREC 01-800-681-9531 (24 hours) South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600 Argentina: +(54)-1159839431								
	Responsible Department:Product Safety and Toxicology GroupE-mail address:SDS@CPChem.comWebsite:www.CPChem.com								
	MEDICAL APPLICATION CAUTION: Do not use this material in medical applications involving permanent implantation in the human body or permanent contact with internal body fluids or tissues fluids or tissues.								
	Do not use this material in m human body or contact with i directly from Chevron Phillips expressly acknowledges the	nternal body fluid Chemical Comp	s or tissues unless the mate any LP or its legal affiliates	erial has been provided					
	Chevron Phillips Chemical C express warranty or implied v in the human body or in conta	warranty concerni	ng the suitability of this mat						
SEC	TION 2: Hazards identificat	ion							
2.1	Classification of the substance or mixture REGULATION (EC) No 1272/2008 Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.								
SEC	TION 3: Composition/inform	nation on ingred	ients						
3.1 ⋅ Sub	3.2 stance or Mixture Hazardous ingredients								
	Chemical name	CAS-No. EC-No. Index No.	Classification (REGULATION (EC) No 1272/2008)	Concentration [wt%]					
	Polyethylene	9002-88-4	1212/2000)	99 - 100					
	Contains no hazardous ingredients according to GHS. :								
SDS	Number:10000000632		2/11						

SAFETY DATA SHEET

Version 1.6

Revision Date 2019-10-15

SEC	TION	4: I	First	aid	measures

#### 4.1

# Description of first-aid measures

If inhaled	:	Move to fresh air in case of accidental inhalation of dust or fumes from overheating or combustion. If symptoms persist, call a physician.
In case of skin contact	:	If the molten material gets on skin, quickly cool in water. Seek immediate medical attention. Do not try to peel the solidified material from the skin or use solvents or thinners to dissolve it.
In case of eye contact	:	In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
If swallowed	:	Do not induce vomiting without medical advice.

#### SECTION 5: Firefighting measures

	Flash point Autoignition temperature	:	No data available No data available
5.1	Extinguishing media		
	Suitable extinguishing media	:	Water. Water mist. Dry chemical. Carbon dioxide (CO2). Foam. If possible, water should be applied as a spray from a fogging nozzle since this is a surface burning material. The application of high velocity water will spread the burning surface layer. Avoid the use of straight streams that may create a dust cloud and the risk of a dust explosion. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

#### 5.2

#### Special hazards arising from the substance or mixture

Specific hazards during fire : Risks of ignition followed by flame propagation or secondary explosions can be caused by the accumulation of dust, e.g. on floors and ledges.

#### 5.3

5.3			
	Advice for firefighters Special protective equipment for fire-fighters	:	Use personal protective equipment. Wear self-contained breathing apparatus for firefighting if necessary.
	Further information	:	This material will burn although it is not easily ignited.
	Fire and explosion protection	:	Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
	Hazardous decomposition products	:	Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic
SDS	S Number:10000000632		3/11

# Marlex® 9659 Polyethylene

Version 1.6

Revision Date 2019-10-15

acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.

E(							
	CTION 6: Accidental release m	nea	asures				
6.1							
	ve equipment and emergency procedures						
	Personal precautions	:	Sweep up to prevent slipping hazard. Avoid breathing dust. Avoid dust formation.				
6.2			Avoid dust formation.				
Environmental precautions							
	Environmental precautions	:	Do not contaminate surface water. Prevent product from entering drains.				
6.3							
	Methods and materials for content of the material of the mater		tainment and cleaning up Clean up promptly by sweeping or vacuum.				
	Additional advice	:	Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).				
6.4	Reference to other sections						
	Reference to other sections	•					
SEC	CTION 7: Handling and storag	je					
7.1	Precautions for safe handlin						
	Handling	-	Use good housekeeping for safe handling of the product.				
	Handling	-	Use good housekeeping for safe handling of the product. Keep out of water sources and sewers.				
	Handling	-					
	Handling	-	Keep out of water sources and sewers.				
	Handling	-	Keep out of water sources and sewers. Spilled pellets and powders may create a slipping hazard. 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. At elevated temperatures (>350°F, >177°C), polyethylene can release vapors and gases, which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Based on animal data and limited epidemiological evidence, formaldehyde has been listed as a carcinogen. Following all recommendations within this SDS				
7.2	Handling Advice on safe handling Advice on protection	-	Keep out of water sources and sewers. Spilled pellets and powders may create a slipping hazard. 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. At elevated temperatures (>350°F, >177°C), polyethylene can release vapors and gases, which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. These substances may include acetaldehyde, acetone, acetic acid, formic acid, formaldehyde and acrolein. Based on animal data and limited epidemiological evidence, formaldehyde has been listed as a carcinogen. Following all recommendations within this SDS should minimize exposure to thermal processing emissions. Treat as a solid that can burn. Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion				

Version 1.6

Revision Date 2019-10-15

#### Conditions for safe storage, including any incompatibilities

#### Storage

Requirements for storage areas and containers	:	Keep in a dry place. Keep in a well-ventilated place.
Advice on common storage	:	Do not store together with oxidizing and self-igniting products.

#### **SECTION 8: Exposure controls/personal protection**

#### 8.2

#### **Exposure controls Engineering measures**

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	: No respiratory protection is normally required. If heated material generates vapor or fumes that are not adequately controlled by ventilation, wear an appropriate respirator. Use the following elements for air-purifying respirators: Organic Vapor and Formaldehyde. Use a positive pressure, air- supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection. Dust safety masks are recommended when the dust concentration is excessive.
Eye protection	: Use of safety glasses with side shields for solid handling is good industrial practice. If this material is heated, wear chemical goggles or safety glasses with side shields or a face shield. If there is potential for dust, use chemical goggles.
Skin and body protection	: At ambient temperatures use of clean and protective clothing is good industrial practice. If the material is heated or molten, wear thermally insulated, heat-resistant gloves that are able to withstand the temperature of the molten product. If this material is heated, wear insulated clothing to prevent skin contact if engineering controls or work practices are not adequate.
SECTION 9: Physical and chen	nical properties
9.1 Information on basic phys	ical and chemical properties

# 9.1

Information on basic p	Information on basic physical and chemical properties						
Appearance							
Form Physical state	: Pellets : Solid						
SDS Number:10000000632	2	5/11					

sion 1.6		Revision Date 2019-1
Color Odor Odor Threshold	:	Opaque Mild to no odor No data available
Safety data		
Flash point	:	No data available
Lower explosion limit	:	Not applicable
Upper explosion limit	:	Not applicable
Autoignition temperature	:	No data available
Thermal decomposition	:	Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.
рН	:	Not applicable
Melting point/range	:	90 - 140 °C (194 - 284 °F)
Freezing point		Not applicable
Initial boiling point and boiling range	:	Not applicable
Vapor pressure	:	Not applicable
Relative density	:	Not applicable
Density	:	0,91 - 0,97 g/cm3 Please refer to the Technical Data Sheet (TDS) for more detailed information relating to the nominal physical properties, including density, of this polyethylene resin grade.
Water solubility	:	Negligible
Partition coefficient: n- octanol/water	:	No data available
Solubility in other solvents	:	No data available
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Relative vapor density	:	Not applicable
Evaporation rate	:	Not applicable
TION 10: Stability and reactiv		

10.1

Г

SDS Number:10000000632

Marlev® 0650 Polyothy	SAFETY DATA SHEET	
Marlex® 9659 Polyethy Version 1.6	Revision Date 2019-10-15	
Reactivity	This material is considered non-reactive under normal ambient and anticipated storage and handling conditions of temperature and pressure.	
10.2		
Chemical stability	: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.	
10.3		
Possibility of hazardous rea	ictions	
Conditions to avoid	: Avoid prolonged storage at elevated temperature.	
10.5 Materials to avoid	: Avoid contact with strong oxidizing agents.	
Thermal decomposition	: Low molecular weight hydrocarbons, alcohols, aldehydes, acids and ketones can be formed during thermal processing.	
10.6 Hazardous decomposition products	: Normal combustion forms carbon dioxide, water vapor and may produce carbon monoxide, other hydrocarbons and hydrocarbon oxidation products (ketones, aldehydes, organic acids) depending on temperature and air availability. Incomplete combustion can also produce formaldehyde.	
Other data	: No decomposition if stored and applied as directed.	
SECTION 11: Toxicological infor	mation	
11.1 Information on toxicologica	l effects	
Marlex® 9659 Polyethylene Acute oral toxicity	: Presumed Not Toxic	
Marlex® 9659 Polyethylene Acute inhalation toxicity	: Presumed Not Toxic	
Marlex® 9659 Polyethylene Acute dermal toxicity	: Presumed Not Toxic	
Marlex® 9659 Polyethylene Skin irritation	: No skin irritation	
	<ul><li>No skin irritation</li><li>No eye irritation</li></ul>	
Skin irritation Marlex® 9659 Polyethylene		

Marlay@ 0650 Balyath	SAFETY DATA SHEET			
Marlex® 9659 Polyethy Version 1.6	Revision Date 2019-10-15			
Sensitization	: Did not cause sensitization on laboratory animals.			
Sensitization				
Marlex® 9659 Polyethylene Further information	: This product contains POLYMERIZED OLEFINS. During thermal processing (>350°F, >177°C) polyolefins can release vapors and gases (aldehydes,ketones and organic acids) which are irritating to the mucous membranes of the eyes, mouth, throat, and lungs. Generally these irritant effects are all transitory. However, prolonged exposure to irritating off-gases can lead to pulmonary edema. Formaldehyde (an aldehyde) has been classified as a carcinogen based on animal data and limited epidemiological evidence.			
SECTION 12: Ecological inform	ation			
12.1 Toxicity				
Ecotoxicity effects				
12.2				
Persistence and degradabi	lity			
Biodegradability	: This material is not expected to be readily biodegradable.			
12.3 Bioaccumulative potential Elimination information (persistence and degradability)				
Bioaccumulation	: Does not bioaccumulate.			
12.4 Mobility in soil				
Mobility	: The product is insoluble and floats on water.			
12.5 Results of PBT and vPvB a	ssessment			
12.6 Other a during a ffacto				
Other adverse effects Additional ecological information	: This material is not expected to be harmful to aquatic organisms., Fish or birds may eat pellets which may obstruct their digestive tracts.			
Ecotoxicology Assessment	t			
SECTION 13: Disposal considerations				
13.1 Waste treatment methods The information in this SDS pertains only to the product as shipped.				
SDS Number:10000000632	8/11			

### Marlex® 9659 Polyethylene

Version 1.6

Revision Date 2019-10-15

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.

#### **SECTION 14: Transport information**

#### 14.1 - 14.7

#### 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)

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

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

SDS Number:10000000632

9/11

SAFETY DATA SHEET

Version 1.6

Revision Date 2019-10-15

#### **SECTION 15: Regulatory information**

#### 15.1

Safety, health and environmental regulations/legislation specific for the substance or mixture National legislation

Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)

1	
	Water contaminating class : nwg not water endangering (Germany)
	15.2
	Major Accident Hazard: 96/82/ECUpdate: 2003LegislationDirective 96/82/EC does not apply
	<ul> <li>Notification status</li> <li>Europe REACH</li> <li>Switzerland CH INV</li> <li>United States of America (USA)</li> <li>TSCA</li> <li>Canada DSL</li> <li>Australia AICS</li> <li>New Zealand NZIoC</li> <li>Japan ENCS</li> <li>Korea KECI</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> <li>Con the inventory, or in compliance with the inventory</li> </ul>
	Philippines PICCS:On the inventory, or in compliance with the inventoryChina IECSC:On the inventory, or in compliance with the inventoryTaiwan 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

SDS Number:10000000632

#### Version 1.6

Revision Date 2019-10-15

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.

EGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure LimitEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized System Inhibition Concentration 50%RCRA SARAResource Conservation Recovery Act>=Greater Than or Equal To on CancerSTELShort-term Exposure LimitIARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and InventoryTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=Less Than or Equal ToWHMISWorkplace Hazardous Materials Information System	K	ey or legend to abbreviations and a	cronyms used	d in the safety data sheet
SubstancesLevelDSLCanada, Domestic Substances ListNFPANational Fire Protection Agency National Fire Protection AgencyNDSLCanada, Non-Domestic Substances ListNIOSHNational Institute for Occupational Safety & HealthCNSCentral Nervous SystemNTPNational Toxicology ProgramCASChemical Abstract ServiceNZIoCNew Zealand Inventory of ChemicalsEC50Effective ConcentrationNOAELNo Observable Adverse Effect LevelEC50Effective Concentration 50%NOECNo Observed Effect ConcentrationEGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemical SubstancesPELPermissible Exposure LimitEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not Toxic>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARC Inventory of Existing Chemical SubstancesTWATime Weighted AverageIECSCJapan, Inventory of Existing and New Chemical SubstancesTXCAToxic Substance Control Act NaterIRCSJapan, Inventory of Existing and New Chemical SubstancesTWATime Weighted AverageENCSJapan, Inventory of Existing and New Chemical		American Conference of		
ListNIOSLCanada, Non-Domestic Substances ListNIOSHNational Institute for Occupational Safety & HealthCNSCentral Nervous SystemNTPNational Toxicology ProgramCASChemical Abstract ServiceNZIoCNew Zealand Inventory of ChemicalsEC50Effective ConcentrationNOAELNo Observable Adverse Effect LevelEC50Effective Concentration 50%NOECNo Observable Adverse Effect LevelEGSTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure Limit Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicSetGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueENCSJapan, Inventory of Existing and New Chemical SubstancesTWATime Weighted AverageKECIKorea, Existing Chemical UventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological MaterialsENCSLess Than or Equal ToWHMISWorkplace Hazardous Materials		Substances	-	Level
Substances ListSafety & HealthCNSCentral Nervous SystemNTPNational Toxicology ProgramCASChemical Abstract ServiceNZloCNew Zealand Inventory of ChemicalsEC50Effective ConcentrationNOAELNo Observable Adverse Effect LevelEC50Effective Concentration 50%NOECNo Observable Adverse Effect LevelEC50Effective Concentration 50%NOECNo Observed Effect ConcentrationEGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure LimitEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research New Chemical SubstancesTUVThreshold Limit ValueIECSCJapan, Inventory of Existing and New Chemical SubstancesTSCAToxic Substance Control Act Biological MaterialsKECIKorea, Existing Chemical New Chemical SubstancesUVCBUnknown or Variable Composition Complex Reaction Products, and Biological MaterialsKECIKorea	DSL	List	NFPA	
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 Observable Adverse Effect Level           EC50         Effective Concentration 50%         NOEC         No Observed Effect Concentration           EGEST         EOSCA Generic Exposure Scenario Tool         Oscupational 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           S         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	NDSL		NIOSH	
EC50Effective ConcentrationNOAELNo Observable Adverse Effect LevelEC50Effective Concentration 50%NOECNo Observed Effect ConcentrationEGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure Limit Commercial Chemical SubstancesEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageKECIKorea, Existing Chemical New Chemical SubstancesUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials Information System	CNS	Central Nervous System	NTP	National Toxicology Program
EC50Effective Concentration 50%NOECNo Observed Effect ConcentrationEGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure Limit Commercial Chemical SubstancesEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized System Inhibition Concentration 50%SARAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitICS0Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	CAS		NZIoC	Chemicals
EGESTEOSCA Generic Exposure Scenario ToolOSHAOccupational Safety & Health AdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure LimitEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized System Inhibition Concentration 50%RCRA SARAResource Conservation Recovery Act>=Greater Than or Equal To on CancerSTELShort-term Exposure LimitIARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and InventoryTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	EC50	50 Effective Concentration		
Scenario ToolAdministrationEOSCAEuropean Oilfield Specialty Chemicals AssociationPELPermissible Exposure LimitEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCJapan, Inventory of Existing Chemical Substances in ChinaTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=		Effective Concentration 50%	NOEC	No Observed Effect Concentration
Chemicals AssociationPICCSEINECSEuropean Inventory of Existing Chemical SubstancesPICCSPhilippines Inventory of Commercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and New Chemical SubstancesTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	EGEST		OSHA	
Chemical SubstancesCommercial Chemical SubstancesMAKGermany Maximum Concentration ValuesPRNTPresumed Not ToxicGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and New Chemical SubstancesTSCAToxic Substance Control ActKECIKorea, Existing Chemical New Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	EOSCA	Chemicals Association	PEL	Permissible Exposure Limit
ValuesValuesGHSGlobally Harmonized SystemRCRAResource Conservation Recovery Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and New Chemical SubstancesTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	EINECS	Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
Act>=Greater Than or Equal ToSTELShort-term Exposure LimitIC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and 	MAK		PRNT	Presumed Not Toxic
IC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and New Chemical SubstancesTSCAToxic Substance Control ActKECIKorea, Existing Chemical InventoryUVCBUnknown or Variable Composition Complex Reaction Products, and Biological Materials<=	GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
IC50Inhibition Concentration 50%SARASuperfund Amendments and Reauthorization Act.IARCInternational Agency for Research on CancerTLVThreshold Limit ValueIECSCInventory of Existing Chemical Substances in ChinaTWATime Weighted AverageENCSJapan, Inventory of Existing and 	>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
on Cancer     TWA       IECSC     Inventory of Existing Chemical Substances in China     TWA       ENCS     Japan, Inventory of Existing and New Chemical Substances     TSCA       KECI     Korea, Existing Chemical Inventory     UVCB       UVCB     Unknown or Variable Composition Complex Reaction Products, and Biological Materials       <=	IC50		SARA	Superfund Amendments and
Substances in China       Toxic Substance Control Act         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         <=	IARC		TLV	Threshold Limit Value
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         <=	IECSC		TWA	Time Weighted Average
KECI         Korea, Existing Chemical Inventory         UVCB         Unknown or Variable Composition Complex Reaction Products, and Biological Materials           <=	ENCS	Japan, Inventory of Existing and	TSCA	Toxic Substance Control Act
Information System	KECI			
	<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials
LC50   Lethal Concentration 50%	LC50	Lethal Concentration 50%		