

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

## SECTION 1. IDENTIFICATION

Product name : Rotella Ultra ELC Antifreeze/Coolant Concentrate

Product code : 001C6893

### Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**  
PO Box 4427  
Houston TX 77210-4427  
USA

SDS Request : (+1) 877-276-7285  
Customer Service :

### Emergency telephone number

Spill Information : 877-504-9351  
Health Information : 877-242-7400

### Recommended use of the chemical and restrictions on use

Recommended use : Antifreeze and coolant.

## SECTION 2. HAZARDS IDENTIFICATION

### GHS Classification

Acute toxicity (Oral) : Category 4

Specific target organ toxicity  
- repeated exposure : Category 2 (Kidney)

### GHS label elements

Hazard pictograms :



Signal word : Warning

Hazard statements : **PHYSICAL HAZARDS:**  
Not classified as a physical hazard under GHS criteria.  
**HEALTH HAZARDS:**  
H302 Harmful if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.  
**ENVIRONMENTAL HAZARDS:**  
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**  
P264 Wash hands thoroughly after handling.  
P270 Do not eat, drink or smoke when using this product.  
**Response:**  
P301 + P312 IF SWALLOWED: Call a POISON CENTER/doctor

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

if you feel unwell.  
P330 Rinse mouth.

**Storage:**

No precautionary phrases.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Contains ethanediol.

Contains bittering agent.

**Other hazards which do not result in classification**

Intentional abuse, misuse or other massive exposure may cause multiple organ damage and or death.

The classification of this material is based on OSHA HCS 2012 criteria.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture of ethylene glycol, water and additives.

**Hazardous components**

Chemical name	Synonyms	CAS-No.	Concentration (%)
Ethanediol	ethane-1,2-diol (In-gested)	107-21-1	40 - 60
Diethylene glycol	2,2'-oxydiethanol	111-46-6	1 - 3

## SECTION 4. FIRST-AID MEASURES

- General advice : DO NOT DELAY.  
Keep victim calm. Obtain medical treatment immediately.
- If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.  
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Flush eye with copious quantities of water.  
If persistent irritation occurs, obtain medical attention.
- If swallowed : DO NOT DELAY.  
If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration.
- Most important symptoms and effects, both acute and delayed : Kidney toxicity may be recognized by blood in the urine or increased or decreased urine flow. Other signs and symptoms can include nausea, vomiting, abdominal cramps, diarrhoea, lumbar pain shortly after ingestion, and possibly narcosis and death.

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness and/or death.

- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Immediate medical attention, special treatment : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! The preferred treatment is immediate transportation to a medical facility and use of appropriate treatment including possible administration of activated charcoal, gastric lavage and or gastric aspiration. If none of the above are immediately available and a delay of more than one hour is anticipated before such medical attention can be obtained, induction of vomiting may be appropriate using IPECAC syrup (Contraindicated if there are any signs of CNS depression). This should be considered on a case by case basis following specialist advice. Specific other treatments may include ethanol therapy, fomepizole, treatment of acidosis and haemodialysis. Seek specialist advice without delay.

## SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
- Environmental precautions : Use appropriate containment to avoid environmental contami-

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

- nation. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely
- For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely Remove contaminated soil and dispose of safely.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet.  
For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.
- Local authorities should be advised if significant spillages cannot be contained.
- U.S. regulations may require reporting releases of this material to the environment which exceed the reportable quantity (refer to Chapter 15) to the National Response Center at (800) 424-8802.

## SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.  
Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Precautions for safe handling : Avoid prolonged or repeated contact with skin.  
Avoid inhaling vapour and/or mists.  
When handling product in drums, safety footwear should be worn and proper handling equipment should be used.  
Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.

### Storage

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

- Other data : Keep container tightly closed and in a cool, well-ventilated place.  
Use properly labeled and closable containers.  
Store at ambient temperature.
- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene.  
Unsuitable material: Zinc., Avoid contact with galvanized materials.
- Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

## SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Ethanediol	107-21-1	C (Aerosol only)	100 mg/m <sup>3</sup>	ACGIH

### Biological occupational exposure limits

No biological limit allocated.

### Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

- Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances.  
Appropriate measures include:  
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:

Define procedures for safe handling and maintenance of

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

## Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.  
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.  
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.  
Check with respiratory protective equipment suppliers.  
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.  
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection  
Remarks

: Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

dependent on the exact composition of the glove material.  
Glove thickness should be typically greater than 0.35 mm  
depending on the glove make and model.

- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.  
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

## Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.  
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : yellow
- Odour : characteristic
- Odour Threshold : Data not available
- pH : Not applicable
- Melting point/freezing point : -37 °C / -35 °F (50.0 hPa)  
Method: ASTM D1177
- Initial boiling point and boiling range : > 100 °C / 212 °F estimated value(s)
- Flash point :  $\geq 116$  °C /  $\geq 241$  °F  
Method: ASTM D92
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available
- Upper explosion limit : Typical 15 %(V)
- Lower explosion limit : Typical 3 %(V)

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

Vapour pressure	: Data not available
Relative vapour density	: Data not available
Density	: 1,120 - 1,140 kg/m <sup>3</sup> (15.6 °C / 60.1 °F) Method: Unspecified
Solubility(ies)	
Water solubility	: completely soluble
Solubility in other solvents	: Data not available
Partition coefficient: n-octanol/water	: Data not available
Auto-ignition temperature	: > 200 °C / 392 °F
Viscosity	
Viscosity, dynamic	: Data not available
Conductivity	: This material is not expected to be a static accumulator.
Decomposition temperature	: Data not available

## SECTION 10. STABILITY AND REACTIVITY

Chemical stability	: Stable.
Possibility of hazardous reactions	: Reacts with strong oxidising agents.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: Strong oxidising agents.
Hazardous decomposition products	: Hazardous decomposition products are not expected to form during normal storage.

## SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	: Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).
----------------------	---

### Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

### Acute toxicity



# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

## **Product:**

Acute oral toxicity : LD50 (rat): > 500 - 2,000 mg/kg  
Remarks: Harmful if swallowed.

Remarks: There is a marked difference in acute oral toxicity between rodents and man, man being more susceptible than rodents. The estimated fatal dose for man is 100 milliliters (1/2 cup). This material has also been shown to be toxic and potentially lethal by ingestion to cats and dogs. Ingestion may cause drowsiness and dizziness.

Acute inhalation toxicity : LC 50 (Rat): > 5 mg/l  
Exposure time: 4 h  
Remarks: Low toxicity:

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Low toxicity:

## **Skin corrosion/irritation**

### **Product:**

Remarks: Expected to be slightly irritating.

## **Serious eye damage/eye irritation**

### **Product:**

Remarks: Expected to be slightly irritating.

## **Respiratory or skin sensitisation**

### **Product:**

Remarks: Not expected to be a skin sensitiser.

## **Germ cell mutagenicity**

### **Product:**

: Remarks: Not considered a mutagenic hazard.

## **Carcinogenicity**

### **Product:**

Remarks: Not expected to be carcinogenic.

### **IARC**

Group 2A: Probably carcinogenic to humans

Sodium nitrate

7631-99-4

### **ACGIH**

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

### **OSHA**

No component of this product present at levels greater than or

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

## **NTP**

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

## **Reproductive toxicity**

### **Product:**

:

Remarks: Not expected to impair fertility., Not expected to be a developmental toxicant.

## **STOT - single exposure**

### **Product:**

Remarks: Not expected to be a hazard.

## **STOT - repeated exposure**

### **Product:**

Remarks: Kidney: can cause kidney damage.

## **Aspiration toxicity**

### **Product:**

Not considered an aspiration hazard.

## **Further information**

### **Product:**

Remarks: Slightly irritating to respiratory system.

---

## **SECTION 12. ECOLOGICAL INFORMATION**

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.  
Information given is based on a knowledge of the components and the ecotoxicology of similar products.  
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

## **Ecotoxicity**

### **Product:**

Toxicity to fish (Acute toxicity)

:

Remarks: Expected to be practically non toxic:  
LC/EC/IC50 > 100 mg/l

Toxicity to daphnia and other

:

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

aquatic invertebrates (Acute toxicity) : Remarks: Expected to be practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to algae (Acute toxicity) : Remarks: Expected to be practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to bacteria (Acute toxicity) : Remarks: Data not available

## Persistence and degradability

### Product:

Biodegradability : Remarks: Readily biodegradable.

## Bioaccumulative potential

### Product:

Bioaccumulation : Remarks: Not expected to bioaccumulate significantly.

## Mobility in soil

### Product:

Mobility : Remarks: Liquid under most environmental conditions. If product enters soil, it will be highly mobile and may contaminate groundwater. Dissolves in water.

## Other adverse effects

no data available

### Product:

Additional ecological information : Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential.

---

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local legislation  
Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

## SECTION 14. TRANSPORT INFORMATION

### National Regulations

#### US Department of Transportation Classification (49 CFR Parts 171-180)

UN/ID/NA number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(Ethylene glycol)  
Class : 9  
Packing group : III  
Labels : 9  
Reportable quantity : Ethylene glycol  
(5,000 lb)  
Marine pollutant : no  
Remarks : This material is not regulated under 49 CFR if in a container of  
119 gallon capacity or less.

### International Regulation

#### IATA-DGR

Not regulated as a dangerous good

#### IMDG-Code

Not regulated as a dangerous good

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

Pollution category : Not applicable  
Ship type : Not applicable  
Product name : Not applicable  
Special precautions : Not applicable

### Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage,  
for special precautions which a user needs to be aware of or  
needs to comply with in connection with transport.

Additional Information : MARPOL Annex 1 rules apply for bulk shipments by sea.

## SECTION 15. REGULATORY INFORMATION

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

**OSHA Hazards** : Toxic by ingestion, Carcinogen

## EPCRA - Emergency Planning and Community Right-to-Know Act

### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Ethylene Glycol	107-21-1	5000	5000

### CERCLA Reportable Quantity

Calculated RQ exceeds reasonably attainable upper limit.

### CERCLA Reportable Quantity

Shell classifies this material as an "oil" under the CERCLA Petroleum Exclusion, therefore releases to the environment are not reportable under CERCLA.

### CERCLA Reportable Quantity

The components with RQs are given for information.

### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

**SARA 311/312 Hazards** : Acute Health Hazard  
Chronic Health Hazard

### Clean Water Act

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

### US State Regulations

#### Pennsylvania Right To Know

Ethanediol 107-21-1  
Diethylene glycol 111-46-6

#### New Jersey Right To Know

Ethanediol 107-21-1

#### California Prop 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

### The components of this product are reported in the following inventories:

EINECS : All components listed or polymer exempt.

TSCA : All components listed.

DSL : All components listed.

## SECTION 16. OTHER INFORMATION

### Further information

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

NFPA Rating (Health, Fire, Reactivity) 2, 1, 0

A vertical bar (|) in the left margin indicates an amendment from the previous version.  
Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists  
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road  
AICS = Australian Inventory of Chemical Substances  
ASTM = American Society for Testing and Materials  
BEL = Biological exposure limits  
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes  
CAS = Chemical Abstracts Service  
CEFIC = European Chemical Industry Council  
CLP = Classification Packaging and Labelling  
COC = Cleveland Open-Cup  
DIN = Deutsches Institut für Normung  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
DSL = Canada Domestic Substance List  
EC = European Commission  
EC50 = Effective Concentration fifty  
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals  
ECHA = European Chemicals Agency  
EINECS = The European Inventory of Existing Commercial Chemical Substances  
EL50 = Effective Loading fifty  
ENCS = Japanese Existing and New Chemical Substances Inventory  
EWC = European Waste Code  
GHS = Globally Harmonised System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer  
IATA = International Air Transport Association  
IC50 = Inhibitory Concentration fifty  
IL50 = Inhibitory Level fifty  
IMDG = International Maritime Dangerous Goods  
INV = Chinese Chemicals Inventory  
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables  
KECI = Korea Existing Chemicals Inventory  
LC50 = Lethal Concentration fifty  
LD50 = Lethal Dose fifty per cent.  
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading  
LL50 = Lethal Loading fifty  
MARPOL = International Convention for the Prevention of Pollution From Ships  
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level  
OE\_HP V = Occupational Exposure - High Production Volume

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

Version 4.1

Revision Date: 03/16/2016

Print Date: 05/02/2016

PBT = Persistent, Bioaccumulative and Toxic  
PICCS = Philippine Inventory of Chemicals and Chemical  
Substances  
PNEC = Predicted No Effect Concentration  
REACH = Registration Evaluation And Authorisation Of  
Chemicals  
RID = Regulations Relating to International Carriage of Dan-  
gerous Goods by Rail  
SKIN\_DES = Skin Designation  
STEL = Short term exposure limit  
TRA = Targeted Risk Assessment  
TSCA = US Toxic Substances Control Act  
TWA = Time-Weighted Average  
vPvB = very Persistent and very Bioaccumulative

Revision Date : 03/16/2016

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.