

# SAFETY DATA SHEET

<b>SECTION 1</b>	<b>IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING</b>
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This Safety Data Sheet is based on European Union regulatory requirements.

## 1.1. PRODUCT IDENTIFIER

**Product Name:** MOBILGARD 412  
**Product Description:** Base Oil and Additives  
**Product Code:** 201540103020, 400353, 602482-60

## 1.2. RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

**Intended Use:** Diesel engine oil

**Uses advised against:** None unless specified elsewhere in this SDS.

## 1.3. DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

**Supplier:** EXXONMOBIL PETROLEUM & CHEMICAL MOSCOW REP. OFFICE  
31 NOVINSKY BOULEVARD  
123242 MOSCOW  
Russian Fed.

**Supplier General Contact:** +7 (495) 1391444  
**SDS Internet Address:** [www.msds.exxonmobil.com](http://www.msds.exxonmobil.com)

## 1.4. EMERGENCY TELEPHONE NUMBER

<b>SECTION 2</b>	<b>HAZARDS IDENTIFICATION</b>
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## 2.1. CLASSIFICATION OF SUBSTANCE OR MIXTURE

**Classification according to Regulation (EC) No 1272/2008**

Not Classified

## 2.2. LABEL ELEMENTS

No label elements according to Regulation (EC) No 1272/2008

**Contains:** CALCIUM SULPHONATE, , May produce an allergic reaction.

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## 2.3. OTHER HAZARDS

### Physical / Chemical Hazards:

No significant hazards.

### Health Hazards:

Excessive exposure may result in eye, skin, or respiratory irritation.

### Environmental Hazards:

No significant hazards. Material does not meet the criteria for PBT or vPvB in accordance with REACH Annex XIII.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

**3.1. SUBSTANCES** Not Applicable. This material is regulated as a mixture.

### 3.2. MIXTURES

This material is defined as a mixture.

### Reportable hazardous substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

Name	CAS#	EC#	Registration#	Concentration *	GHS/CLP classification
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	2215-35-2	218-679-9	01-2119953275-34	0.1 - < 1%	[Acute Tox. 5 H303], [Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Skin Irrit. 2 H315, Eye Dam. 1 H318
BENZENE SULFONIC ACIDS, C10-16 ALKYL DERIVS., CA SALTS	68584-23-6	271-529-4	01-2119492627-25	0.1 - < 1%	Skin Sens. 1 H317
BENZENESULFONIC ACID, MONO-C16-24-ALKYL DERIVS. CALCIUM SALTS	70024-69-0	274-263-7	01-2119492616-28	0.1 - < 1%	Skin Sens. 1 H317
BRANCHED ALKYLPHENOL AND CALCIUM BRANCHED ALKYLPHENOL (74499-35-7 & 132752-19-3)	121158-58-5	310-154-3	01-2119513207-49	0.1 - < 0.25%	Aquatic Acute 1 H400 (M factor 10), Aquatic Chronic 1 H410 (M factor 10), Repr. 1B H360F, Skin Corr. 1C H314
CALCIUM LONG CHAIN ALKARYL SULPHONATE	722503-69-7	POLYMER	NE	1 - < 5%	Skin Sens. 1 H317
SULFONIC ACIDS, PETROLEUM, CALCIUM SALTS	61789-86-4	263-093-9	01-2119488992-18	0.1 - < 1%	Skin Sens. 1 H317

Note - any classification in brackets is a GHS building block that was not adopted by the EU in the CLP regulation (No 1272/2008) and therefore is not applicable in the EU or in non-EU countries which have implemented the CLP regulation and is shown for informational purposes only.

Note: See SDS Section 16 for full text of hazard statements.

## SECTION 4 FIRST AID MEASURES

### 4.1. DESCRIPTION OF FIRST AID MEASURES

#### **INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

#### **SKIN CONTACT**

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

#### **EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

#### **INGESTION**

First aid is normally not required. Seek medical attention if discomfort occurs.

#### **4.2. MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED**

No important symptoms or effects.

#### **4.3. INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED**

The need to have special means for providing specific and immediate medical treatment available in the workplace is not expected.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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#### **5.1. EXTINGUISHING MEDIA**

**Suitable Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Unsuitable Extinguishing Media:** Straight streams of water

#### **5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE**

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

#### **5.3. ADVICE FOR FIRE FIGHTERS**

**Fire Fighting Instructions:** Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

#### **FLAMMABILITY PROPERTIES**

**Flash Point [Method]:** 235°C (455°F) [ASTM D-92]

**Upper/Lower Flammable Limits (Approximate volume % in air):** UEL: 7.0 LEL: 0.9 [Estimated]

**Autoignition Temperature:** No data available

<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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## 6.1. PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

### PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

## 6.2. ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## 6.3. METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

**Land Spill:** Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

**Water Spill:** Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## 6.4. REFERENCES TO OTHER SECTIONS

See Sections 8 and 13.

<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
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## 7.1. PRECAUTIONS FOR SAFE HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include

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American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator.

## 7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

## 7.3. SPECIFIC END USES

Section 1 informs about identified end-uses. No industrial or sector specific guidance available.

# SECTION 8

# EXPOSURE CONTROLS / PERSONAL PROTECTION

## 8.1. CONTROL PARAMETERS

**Exposure limits/standards for materials that can be formed when handling this product:** When mists/aerosols can occur the following is recommended: 5 mg/m<sup>3</sup> - ACGIH TLV (inhalable fraction).

Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s):

## 8.2. EXPOSURE CONTROLS

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions.

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Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing 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.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### 9.1. INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

**Physical State:** Liquid

**Colour:** Brown

**Odour:** Characteristic

**Odour Threshold:** No data available

**pH:** Not technically feasible

**Melting Point:** Not technically feasible

**Freezing Point:** No data available

**Initial Boiling Point / and Boiling Range:** > 316°C (600°F) [Estimated]

**Flash Point [Method]:** 235°C (455°F) [ASTM D-92]

**Evaporation Rate (n-butyl acetate = 1):** No data available

**Flammability (Solid, Gas):** Not technically feasible

**Upper/Lower Flammable Limits (Approximate volume % in air):** UEL: 7.0 LEL: 0.9 [Estimated]

**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C [Estimated]

**Vapour Density (Air = 1):** > 2 at 101 kPa [Estimated]

**Relative Density (at 15 °C):** 0.898 [ASTM D4052]

**Solubility(ies): water** Negligible

**Partition coefficient (n-Octanol/Water Partition Coefficient):** > 3.5 [Estimated]

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** [N/D at 40°C] | 14.5 cSt (14.5 mm<sup>2</sup>/sec) at 100°C [ASTM D 445]

**Explosive Properties:** None

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**Oxidizing Properties:** None

## 9.2. OTHER INFORMATION

**Pour Point:** -6°C (21°F) [ASTM D97]  
**DMSO Extract (mineral oil only), IP-346:** < 3 %wt

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**10.1. REACTIVITY:** See sub-sections below.

**10.2. CHEMICAL STABILITY:** Material is stable under normal conditions.

**10.3. POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

**10.4. CONDITIONS TO AVOID:** Excessive heat. High energy sources of ignition.

**10.5. INCOMPATIBLE MATERIALS:** Strong oxidisers

**10.6. HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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### 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

<b>Hazard Class</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitisation</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for	Not expected to cause cancer. Based on assessment of the

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material.	components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

## TOXICITY FOR SUBSTANCES

NAME	ACUTE TOXICITY
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC SALT	Oral Lethality: LD 50 2230 mg/kg (Rat)

## OTHER INFORMATION

### For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies.

### Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals. Tetrapropenyl phenol (TPP). TPP was tested in a rat oral gavage one-generation reproductive toxicity study and a rat dietary two-generation reproductive toxicity study. Results from the one-generation study included reduced ovary weights and changes in male reproductive accessory organs. Results from the two-generation study included prolonged estrous cyclicity, reduced ovary weights, accelerated sexual maturation, decreased mean live litter size, decreased fertility rates, hypospermia, and reduced weights of male reproductive accessory organs. A classification threshold for reproductive effects of 1.5 wt% TPP was derived by the supplier based on the NOAEL (15 mg/kg/day) from the rat dietary two-generation study and was confirmed in supporting studies with other substances containing TPP as an impurity.

## SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

### 12.1. TOXICITY

Material -- Not expected to be harmful to aquatic organisms.

### 12.2. PERSISTENCE AND DEGRADABILITY

#### Biodegradation:

Base oil component -- Expected to be inherently biodegradable

### 12.3. BIOACCUMULATIVE POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

### 12.4. MOBILITY IN SOIL



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Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

#### 12.5. PERSISTENCE, BIOACCUMULATION AND TOXICITY FOR SUBSTANCE(S)

Material does not meet the Reach Annex XIII criteria for PBT or vPvB.

#### 12.6. OTHER ADVERSE EFFECTS

No adverse effects are expected.

NOTE: One or more additive components of this material contains a branched alkylphenol impurity that is highly toxic to aquatic organisms. The components containing the impurity have been tested by the additive supplier and found to be no more than minimally toxic to aquatic organisms.

<b>SECTION 13</b>	<b>DISPOSAL CONSIDERATIONS</b>
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

#### 13.1. WASTE TREATMENT METHODS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

**European Waste Code:** 13 02 05\*

NOTE: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s).

This material is considered as hazardous waste pursuant to Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

<b>SECTION 14</b>	<b>TRANSPORT INFORMATION</b>
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**LAND (ADR/RID):** 14.1-14.6 Not Regulated for Land Transport

**INLAND WATERWAYS (ADN):** 14.1-14.6 Not Regulated for Inland Waterways Transport

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**SEA (IMDG): 14.1-14.6** Not Regulated for Sea Transport according to IMDG-Code

**SEA (MARPOL 73/78 Convention - Annex II):**

**14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
 Not classified according to Annex II

**AIR (IATA): 14.1-14.6** Not Regulated for Air Transport

<b>SECTION 15</b>	<b>REGULATORY INFORMATION</b>
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**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA): AIIC, DSL, ENCS, ISHL, KECI, PICCS, TCSI, TSCA

**Special Cases:**

Inventory	Status
IECSC	Restrictions Apply

**15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE**

**Applicable EU Directives and Regulations:**

1907/2006 [... on the Registration, Evaluation, Authorisation and Restriction of Chemicals ... and amendments thereto]  
 1272/2008 [on classification, labelling and packaging of substances and mixtures.. and amendments thereto]

**15.2. CHEMICAL SAFETY ASSESSMENT**

**REACH Information:** A Chemical Safety Assessment has been carried out for one or more substances present in the material.

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
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**REFERENCES:** Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, CONCAWE Product Dossiers, publications from other trade associations, such as the EU Hydrocarbon Solvents REACH Consortium, U.S. HPV Program Robust Summaries, the EU IUCLID Data Base, U.S. NTP publications, and other sources, as appropriate.

**List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:**

Acronym	Full text
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N/A	Not applicable
N/D	Not determined
NE	Not established
VOC	Volatile Organic Compound
AIC	Australian Inventory of Industrial Chemicals
AIHA WEEL	American Industrial Hygiene Association Workplace Environmental Exposure Limits
ASTM	ASTM International, originally known as the American Society for Testing and Materials (ASTM)
DSL	Domestic Substance List (Canada)
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and new Chemical Substances (Japanese inventory)
IECSC	Inventory of Existing Chemical Substances in China
KECI	Korean Existing Chemicals Inventory
NDSL	Non-Domestic Substances List (Canada)
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
TLV	Threshold Limit Value (American Conference of Governmental Industrial Hygienists)
TSCA	Toxic Substances Control Act (U.S. inventory)
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
LC	Lethal Concentration
LD	Lethal Dose
LL	Lethal Loading
EC	Effective Concentration
EL	Effective Loading
NOEC	No Observable Effect Concentration
NOELR	No Observable Effect Loading Rate

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

[Acute Tox. 5 H303]: May be harmful if swallowed; Acute Tox Oral, Cat 5  
 Skin Corr. 1 H314: Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1  
 Skin Corr. 1C H314: Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1C  
 Skin Irrit. 2 H315: Causes skin irritation; Skin Corr/Irritation, Cat 2  
 [Skin Irrit. 3 H316]: Causes mild skin irritation; Skin Corr/Irritation, Cat 3  
 Skin Sens. 1 H317: May cause allergic skin reaction; Skin Sensitization, Cat 1  
 Eye Dam. 1 H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1  
 Eye Irrit. 2 H319: Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2  
 Repr. 1B H360F: May damage fertility; Repro Tox, Cat 1B (Fertility)  
 Aquatic Acute 1 H400: Very toxic to aquatic life; Acute Env Tox, Cat 1  
 [Aquatic Acute 2 H401]: Toxic to aquatic life; Acute Env Tox, Cat 2  
 Aquatic Chronic 1 H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1  
 Aquatic Chronic 2 H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Composition: Component Table for REACH information was modified.  
 Composition: Defined as statement (CLP) information was modified.  
 Composition: Footnotes information was modified.  
 Composition: Regulated as Header information was modified.  
 Composition: Substances Table(s) - Header - Disclosure information was modified.  
 Hazard Identification: Health Hazards information was modified.  
 Hazard Identification: Physical/Chemical Hazards - Header information was modified.  
 Hazard Identification: Section 3 Footnotes for CLP tables information was modified.  
 Section 01: Hazard Classification - Header information was modified.  
 Section 01: Product Code - Header information was modified.

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Section 01: Product Intended Use - Header information was modified.  
Section 01: Product Intended Use Phrases information was modified.  
Section 01: Supplier Mailing Address information was modified.  
Section 04: Symptoms and Effects information was modified.  
Section 05: Fire Fighting Measures - Advice for Fire Fighters - Header information was modified.  
Section 05: Fire Fighting Measures - Special Hazards - Header information was modified.  
Section 05: Fire Fighting Measures - Unsuitable Extinguishing Media - Header information was modified.  
Section 06: Accidental Release Measures - Environmental Precautions information was modified.  
Section 06: Notification Procedures - Header information was modified.  
Section 06: Protective Measures information was modified.  
Section 06: References to other sections - Header information was modified.  
Section 07: Handling and Storage - Storage information was modified.  
Section 08: Environmental Control - Note information was modified.  
Section 08: Personal Protection information was modified.  
Section 09: Flash Point °C(°F) information was modified.  
Section 09: General Information - Header information was modified.  
Section 09: Other Information - Header information was modified.  
Section 09: Oxidizing Properties - Header information was modified.  
Section 09: Phys/Chem Properties Note information was modified.  
Section 09: Relative Density information was modified.  
Section 09: Solubility in Water information was modified.  
Section 11 Substance Toxicity table - Header information was modified.  
Section 11: Acute Toxicity Table Header information was modified.  
Section 11: Additional Health Information information was modified.  
Section 11: Chronic Tox - Product information was modified.  
Section 11: Other Health Effects Header information was modified.  
Section 11: Other Health Effects information was modified.  
Section 12: Ecological Information - Acute Aquatic Toxicity information was modified.  
Section 12: Ecological Information - Bioaccumulation information was modified.  
Section 12: Ecological Information - Biodegradation information was modified.  
Section 12: Ecological Information - Mobility information was modified.  
Section 12: Section 12 Footnote for GHS information was modified.  
Section 13: Disposal Considerations - Disposal Recommendations information was modified.  
Section 13: Disposal Recommendations - Note information was modified.  
Section 13: European Waste Code Hazardous Note information was modified.  
Section 13: European Waste Codes - NOTE information was modified.  
Section 14: IMO ANNEX II - Default information was modified.  
Section 14: IMO ANNEX II - Header information was modified.  
Section 15: Applicable EU Directives and Regulations information was modified.  
Section 15: EC Regs/Legs - Header information was modified.  
Section 15: EU Directives and Regulations information was modified.  
Section 15: Labeling - Header information was modified.  
Section 15: National Chemical Inventory Listing information was modified.  
Section 16: HCode Key information was modified.  
Section 16: MSN, MAT ID information was modified.  
Section 16: Source Reference information was modified.

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