# SAFETY DATA SHEET

## SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

As of the revision date above, this SDS meets the regulations in the United Kingdom excluding Northern Ireland.

### 1.1. PRODUCT IDENTIFIER

**Product Name:** **LIGHTLY BRANCHED C9 ALCOHOLS XP**
**Product Description:** Alcohol

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

**Intended Use:** Research & Development

**Uses advised against:** This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above.

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

**Supplier:**
**ExxonMobil Petroleum & Chemical BV**
Polderdijkweg
B-2030 Antwerpen
Belgium
Phone: +32 3 790 31 11

**Local Contact:**
**ExxonMobil Chemical Ltd.**
MAILPOINT 14
MARSH LANE
FAWLEY, SOUTHAMPTON
SO45 1TX HAMPSHIRE
Great Britain

**Supplier General Contact:** (UK) (+44) (0) 23 8089 3822
**E-Mail:** sds.uk@exxonmobil.com

### 1.4. EMERGENCY TELEPHONE NUMBER

**24 Hour Emergency Telephone:** +44-870-820-04-18 (CHEMTREC)
**National Poison Control Centre:** (UK) 111

## SECTION 2 HAZARDS IDENTIFICATION

### 2.1. CLASSIFICATION OF SUBSTANCE OR MIXTURE

**Classification according to CLP**
Skin irritation: Category 2., H315: Causes skin irritation.
Eye irritation: Category 2., H319: Causes serious eye irritation.

### 2.2. LABEL ELEMENTS

**Label elements according to CLP**

**Pictograms:**

**Signal Word:** Warning

**Hazard Statements:**

Health:

H315: Causes skin irritation.
H319: Causes serious eye irritation.

**Precautionary Statements:**

Prevention:

P264: Wash skin thoroughly after handling.
P280: Wear protective gloves and eye / face protection.

Response:

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313: If skin irritation occurs: Get medical advice/ attention.
P337 + P313: If eye irritation persists: Get medical advice/attention.
P362 + P364: Take off contaminated clothing and wash it before reuse.

**Contains:** BRANCHED C9 ALCOHOLS

**2.3. OTHER HAZARDS**

**Physical / Chemical Hazards:**

Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Combustible.

**Health Hazards:**

May be irritating to nose, throat, and lungs. If swallowed, may be aspirated and cause lung damage.

**Environmental Hazards:**

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

Toxicological, ecotoxicological, physical and chemical properties may not have been fully investigated. Hazard data above is estimated based on best available information.

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### 3.1. SUBSTANCES

This material is defined as a substance.

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

| Name | CAS# | EC# | Registration# | Concentration * | GHS/CLP classification |
|---|---|---|---|---|---|
| BRANCHED C9 ALCOHOLS | | | NE | 100% | [Acute Tox. 5 H303], [Asp. Tox. 2 H305], [Flam. Liq. 4 H227], Skin Irrit. 2 H315, Eye Irrit. 2 H319 |

Note - any classification in brackets is a GHS building block that was not adopted in CLP and therefore is not applicable in the countries which have implemented CLP and is shown for informational purposes only.

NOTE: This material is supplied for limited use only for purposes of experimental research and development. The material or one of its components has not yet been listed on relevant inventories of chemical substances. It should not be used for commercial purposes or be made available except in small quantities. The material must be used by or under the supervision of a technically qualified person. All persons who may be exposed to this material must be supplied with a copy of this document.

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

**3.2. MIXTURES** Not Applicable. This product is regulated as a substance.

## SECTION 4 FIRST AID MEASURES

### 4.1. DESCRIPTION OF FIRST AID MEASURES

**INHALATION**

Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a mechanical device.

**SKIN CONTACT**

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse.

**EYE CONTACT**

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

**INGESTION**

Seek immediate medical attention. Do not induce vomiting.

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

Headache, dizziness, drowsiness, nausea and other CNS effects. Eye pain, redness, tearing, swelling of eyelids, itching. Itching, pain, redness, swelling of skin.

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

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

## SECTION 5 FIRE FIGHTING MEASURES

### 5.1. EXTINGUISHING MEDIA

**Suitable Extinguishing Media:** Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

**Unsuitable Extinguishing Media:** Straight streams of water or standard foam

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

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

### 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.

**Unusual Fire Hazards:** Combustible. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** 90°C (194°F) [ASTM D-93]
**Upper/Lower Flammable Limits (Approximate volume % in air):** UEL: No data available LEL: No data available
**Autoignition Temperature:** No data available

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### 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. Warn or evacuate occupants in surrounding and downwind areas if required, due to toxicity or flammability of the 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.

### 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:** Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapour-suppressing foam may be used to reduce vapour. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Use clean non-sparking tools to collect absorbed material. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces. 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 advice of a specialist

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.

## SECTION 7 HANDLING AND STORAGE

### 7.1. PRECAUTIONS FOR SAFE HANDLING

Avoid all personal contact. Use proper bonding and/or earthing procedures.However, bonding and earthing may not eliminate the hazard from static accumulation. Prevent small spills and leakage to avoid slip hazard. DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight.

**Static Accumulator:** This material is not a static accumulator.

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

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Storage containers should be earthed and bonded. Fixed storage containers, transfer containers and associated equipment should be earthed and bonded to prevent accumulation of static charge.

### 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

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

UK Health and Safety Executive (HSE)

**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:

Use explosion-proof ventilation equipment. Adequate ventilation should be provided whenever the material is heated or mists are generated.

**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:

Half-face filter respirator Type A filter material, European Committee for Standardization (CEN) standards EN 136, 140 and 405 provide respirator masks and EN 149 and 143 provide filter recommendations.

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. 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:

Chemical resistant gloves are recommended. Nitrile, minimum 0.38 mm thickness or comparable protective barrier material with a high performance level for continuous contact use conditions, permeation breakthrough minimum 480 minutes in accordance with CEN standards EN 420 and EN 374.

**Eye Protection:** Chemical goggles 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:

Chemical/oil resistant clothing is recommended.

**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.**

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

**Physical State:** Liquid
**Form:** Clear
**Colour:** Colourless
**Odour:** Alcohol
**Odour Threshold:** No data available
**pH:** No data available
**Melting Point:** Not technically feasible
**Freezing Point:** -50°C (-58°F) [test method unavailable]
**Initial Boiling Point / and Boiling Range:** 202°C (396°F) - 220°C (428°F) [ASTM D1078]
**Flash Point [Method]:** 90°C (194°F) [ASTM D-93]
**Evaporation Rate (n-butyl acetate = 1):** No data available
**Flammability (Solid, Gas):** Not technically feasible
**Upper/Lower Flammable Limits (Approximate volume % in air):** UEL: No data available LEL: No data available
**Vapour Pressure:** No data available
**Vapour Density (Air = 1):** No data available
**Relative Density (at 20 °C):** 0.84 [ASTM D4052]
**Solubility(ies): water** Negligible
**Partition coefficient (n-Octanol/Water Partition Coefficient):** No data available
**Autoignition Temperature:** No data available
**Decomposition Temperature:** No data available
**Viscosity:** 7.6 cSt (7.6 mm2/sec) at 40ºC | 17 cSt (17 mm2/sec) at 20°C [ASTM D7042]
**Explosive Properties:** None
**Oxidizing Properties:** None

### 9.2. OTHER INFORMATION

**Molecular Weight:** 146 [Approximate]
**Hygroscopic:** No

## SECTION 10 STABILITY AND REACTIVITY

**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:** Open flames and high energy ignition sources.

**10.5. INCOMPATIBLE MATERIALS:** Strong oxidisers

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

## SECTION 11 TOXICOLOGICAL INFORMATION

### 11.1. INFORMATION ON TOXICOLOGICAL EFFECTS

| Hazard Class | Conclusion / Remarks |
|---|---|
| **Inhalation** | |
| Acute Toxicity: No end point data for material. | Minimally Toxic. Material has not been fully evaluated. |
| Irritation: No end point data for material. | Negligible hazard at ambient/normal handling temperatures. |
| **Ingestion** | |
| Acute Toxicity: No end point data for material. | Minimally Toxic. Material has not been fully evaluated. |
| **Skin** | |
| Acute Toxicity: No end point data for material. | Minimally Toxic. Material has not been fully evaluated. |
| Skin Corrosion/Irritation: No end point data for material. | Irritating to the skin. Material has not been fully evaluated. |
| **Eye** | |
| Serious Eye Damage/Irritation: No end point data for material. | Irritating and will injure eye tissue. Material has not been fully evaluated. |
| **Sensitisation** | |
| 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. Material has not been fully evaluated. |
| **Aspiration:** Data available. | May be harmful if swallowed and enters airways. Based on physico-chemical properties of the material. |
| **Germ Cell Mutagenicity:** No end point data for material. | Not expected to be a germ cell mutagen. Material has not been fully evaluated. |
| **Carcinogenicity:** No end point data for material. | Not expected to cause cancer. |
| **Reproductive Toxicity:** No end point data for material. | Not expected to be a reproductive toxicant. Material has not been fully evaluated. |
| **Lactation:** No end point data for material. | Not expected to cause harm to breast-fed children. |
| **Specific Target Organ Toxicity (STOT)** | |
| 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. Material has not been fully evaluated. |

**OTHER INFORMATION**

**For the product itself:**

Vapour concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anaesthetic and may have other central nervous system effects. The toxicological properties of this material have not been fully assessed. This material must be used by or under the supervision of a technically qualified person. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Experimental research and development material. Health hazard data above is estimated based on best available information.

## 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** Not determined.

**12.2. PERSISTENCE AND DEGRADABILITY** Not determined.

**12.3. BIOACCUMULATIVE POTENTIAL** Not determined.

**12.4. MOBILITY IN SOIL**

Not determined.

**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.

## SECTION 13 DISPOSAL CONSIDERATIONS

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**

Suitable routes of disposal are supervised incineration, preferentially with energy recovery, or appropriate recycling methods in accordance with applicable regulations and material characteristics at the time of disposal.

The European Waste Catalogue (EWC) / List of Waste (LoW) code is specific to the waste generating process and waste constituents. Determine the EWC / LoW according to the criteria provided in the European Waste Catalogue and the hazardous waste list established by Commission Decision 2000/532/EC or the UK List of Waste, as amended.

**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.

## SECTION 14 TRANSPORT INFORMATION

**LAND (ADR/RID):** **14.1-14.6** Not Regulated for Land Transport

**INLAND WATERWAYS (ADN)**

**14.1. UN (or ID) Number:** 9003
**14.2. UN Proper Shipping Name (Technical Name):** SUBSTANCES WITH 60°C < f.p.<= 100 °C (C9 alcohols)
**14.3. Transport Hazard Class(es):** 9
**14.4. Packing Group:** (N/A)
**14.5. Environmental Hazards:** None
**14.6. Special Precautions for users:**
**Label(s) / Mark(s):** 9

**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

## SECTION 15 REGULATORY INFORMATION

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

**Listed or exempt from listing/notification on the following chemical inventories :**
**Special Cases:**

| Inventory | Status |
|---|---|
| TSCA | Experimental |

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

**Applicable UK legislation:**

REACH [... Registration, Evaluation, Authorisation and Restriction of Chemicals ... and

amendments thereto]

The Control of Major Accident Hazards (COMAH) Regulations. Product contains a substance that falls within the criteria. Refer to legislation for details of requirements taking into account the volume of product stored on site.

CLP [Classification, labelling and packaging of substances and mixtures.. and amendments thereto]

**REACH Restrictions on the manufacturing, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII):**

Not Applicable

### 15.2. CHEMICAL SAFETY ASSESSMENT

**REACH Information:** A Chemical Safety Assessment has been carried out for one or more substances present in the material. A Chemical Safety Assessment has not been carried out for any of the substances present in the material.

## SECTION 16 OTHER INFORMATION

**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 |
|---|---|
| N/A | Not applicable |
| N/D | Not determined |
| NE | Not established |
| VOC | Volatile Organic Compound |
| AIIC | 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):**
[Flam. Liq. 4 H227]: Combustible liquid; Flammable Liquid, Cat 4
[Acute Tox. 5 H303]: May be harmful if swallowed; Acute Tox Oral, Cat 5
[Asp. Tox. 2 H305]: May be harmful if swallowed and enters airways; Aspiration, Cat 2
Skin Irrit. 2 H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
Eye Irrit. 2 H319: Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**
No revision information

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Internal Use Only
MHC: 0, 0, 0, 2, 4, 0

DGN: 7218687OGB (1031856)

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**ANNEX**

Annex not required for this material.