

Revision Date: 15 Oct 2021

Page 1 of 11

SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBIL 1 ESP X3 0W-40

Product Description: Synthetic Base Stocks and Additives

Product Code: 2015101010K5
Intended Use: Engine oil

COMPANY IDENTIFICATION

Supplier: ExxonMobil Hong Kong Limited

Suite 2301-02&06-08, 23/F, Central Plaza

18 Harbour Road

Wanchai Hong Kong

24 Hour Emergency Telephone 800-968-793 / +1-703-527-3887

Supplier General Contact (852) 2172 8300

Supplier: BRENNTAG CHEMICALS (HK) PTE LTD

6/F, Epoch Industrial Building,

8 Cheung Ho Street,

Tsing Yi, NT Hong Kong

Supplier General Contact (852) 3590 3909/(852)3590 6306

SECTION 2

HAZARDS IDENTIFICATION

This material is not hazardous according to UN GHS Revision 4 Criteria. Classification includes all GHS hazard classes and all GHS hazard categories. For hazard categories with two cut-off/concentration limits, classification was based on the higher limit.

Contains: C14-16-18 ALKYL PHENOL May produce an allergic reaction.

Other hazard information:

PHYSICAL / CHEMICAL HAZARDS

No significant hazards.



Revision Date: 15 Oct 2021

Page 2 of 11

HEALTH HAZARDS

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

ENVIRONMENTAL HAZARDS

No significant hazards.

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 3

COMPOSITION / INFORMATION ON INGREDIENTS

This material is defined as a mixture.

Hazardous Substance(s) or Complex Substance(s) required for disclosure

Name	CAS#	Concentration*	GHS Hazard Codes
1-DECENE, TETRAMER AND TRIMER HYDROGENATED	68649-12-7	5 - < 10%	Н304
2-PENTANOL, 4-METHYL-, HYDROGEN PHOSPHORODITHIOATE, ZINC	2215-35-2	0.1 - < 1%	Н303, Н315, Н318, Н401,
SALT			H411
C14-16-18 ALKYL PHENOL	Confidental	0.1 - < 1%	Н317, Н373
DISTILLATES, HEAVY, C18-50 - BRANCHED, CYCLIC AND LINEAR	848301-69-9	40 - < 50%	Н304
LUB OILS (PET), HYDROTREATED NEUTRAL OIL-BASEDC20-50	72623-87-1	1 - < 5%	H304
LUBRICATING OILS (PETROLEUM), HYDROTREATED NEUTRAL OIL-BASED	72623-86-0	1 - < 5%	Н304
PHOSPHORODITHIOIC ACID, MIXED 0,0 BIS (1,3-DIMETHYLBUTYL AND	84605-29-8	0.1 - < 1%	Н303, Н315, Н318, Н401,
ISO-PR)ESTERS, ZINC SALTS			H411
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	1 - < 5%	H304

^{*} All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

SECTION 4

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.



Revision Date: 15 Oct 2021

Page 3 of 11

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.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

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.

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

FLAMMABILITY PROPERTIES

Flash Point [Method]: >210 C (410 F) [ASTM D-92]

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Autoignition Temperature: N/D

SECTION 6

ACCIDENTAL RELEASE MEASURES

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.

SPILL MANAGEMENT



Revision Date: 15 Oct 2021

Page 4 of 11

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.

ENVIRONMENTAL PRECAUTIONS

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

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid contact with used product. 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 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.

STORAGE

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.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Substance Name	Form	Limit/Standard	Note	Source	Year	l
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Revision Date: 15 Oct 2021

Page 5 of 11

1-DECENE, TETRAMER AND TRIMER HYDROGENATED	Aerosols (thoraci	TWA	5 mg/m3		ExxonMobil	2020
	fraction)					
LUB OILS (PET), HYDROTREATED NEUTRAL OIL-BASEDC20-50	Inhalable fraction	TWA	5 mg/m3		ACGIH	2020
LUBRICATING OILS (PETROLEUM), HYDROTREATED NEUTRAL OIL-BASED	Inhalabl e fraction	TWA	5 mg/m3		ACGIH	2020
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	Mist.	STEL	10 mg/m3		Hong Kong OELs	2002
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	Mist.	TWA	5 mg/m3		Hong Kong OELs	2002
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	Inhalabl e fraction	TWA	5 mg/m3		ACGIH	2020

Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur the following is recommended: 5 mg/m3 - ACGIH TLV (inhalable fraction).

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

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. Particulate



Revision Date: 15 Oct 2021

Page 6 of 11

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:

No protection is ordinarily required under normal conditions of use. Nitrile, Viton

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.

GENERAL INFORMATION

Physical State: Liquid

Colour: Brown

Odour: Characteristic Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15.6 C): 0.846

Flash Point [Method]: >210 C (410 F) [ASTM D-92]



Revision Date: 15 Oct 2021

Page 7 of 11

Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0

Flammability (Solid, Gas): N/A Autoignition Temperature: N/D

Boiling Point / Range: > 316 C (600 F) Vapour Density (Air = 1): > 2 at 101 kPa

Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20 C Evaporation Rate (n-butyl acetate = 1): N/D

pH: N/A

Log Pow (n-Octanol/Water Partition Coefficient): > 3.5

Solubility in Water: Negligible

Viscosity: 71 cSt (71 mm2/sec) at 40 C | 14.1 cSt (14.1 mm2/sec) at 100 C [ASTM D 445]

Freezing Point: N/D Melting Point: N/A

Decomposition Temperature: N/D

Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Pour Point: -39 C (-38 F)

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

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

MATERIALS TO AVOID: Strong oxidisers

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

POSSIBILITY OF HAZARDOUS REACTIONS: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS

<u>Hazard Class</u>	Conclusion / Remarks
Inhalation	
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.
Ingestion	
Acute Toxicity: No end point data for	Minimally Toxic. Based on assessment of the components.
material.	
Skin	



Revision Date: 15 Oct 2021

Page 8 of 11

Acute Toxicity: No end point data for Minimally Toxic. Based on assessment of the components. material. Skin Corrosion/Irritation: No end point Negligible irritation to skin at ambient temperatures. data for material. Based on assessment of the components. Eve Serious Eye Damage/Irritation: No end May cause mild, short-lasting discomfort to eyes. Based on point data for material. assessment of the components. Sensitisation Respiratory Sensitization: No end point Not expected to be a respiratory sensitizer. data for material. Skin Sensitization: No end point data Not expected to be a skin sensitizer. Based on assessment for material. of the components. Not expected to be an aspiration hazard. Based on physico-**Aspiration:** Data available. chemical properties of the material. Germ Cell Mutagenicity: No end point Not expected to be a germ cell mutagen. Based on assessment data for material. of the components. Carcinogenicity: No end point data for Not expected to cause cancer. Based on assessment of the material. components. Reproductive Toxicity: No end point Not expected to be a reproductive toxicant. Based on data for material. assessment of the components. **Lactation:** No end point data for Not expected to cause harm to breast-fed children. material. Specific Target Organ Toxicity (STOT) Single Exposure: No end point data for Not expected to cause organ damage from a single exposure. material. Repeated Exposure: No end point data Not expected to cause organ damage from prolonged or for material. repeated exposure. Based on assessment of the components.

TOXICITY FOR SUBSTANCES

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

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. Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

Contains:

Synthetic base oils: Not expected to cause significant health effects under conditions of normal use, based on laboratory studies with the same or similar materials. Not mutagenic or genotoxic. Not



Revision Date: 15 Oct 2021

Page 9 of 11

sensitising in test animals and humans.

IARC Classification:

The following ingredients are cited on the lists below: None.

-- REGULATORY LISTS SEARCHED--

 $1 = IARC 1 \qquad \qquad 2 = IARC 2A \qquad \qquad 3 = IARC 2B$

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.

ECOTOXICITY

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

MOBILITY

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.

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.

DISPOSAL RECOMMENDATIONS

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. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

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



Revision Date: 15 Oct 2021

Page 10 of 11

LAND (ADR): Not Regulated for Land Transport

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

Marine Pollutant: No

AIR (IATA): Not Regulated for Air Transport

SECTION 15

REGULATORY INFORMATION

Material is not hazardous according to UN GHS Revision 4 Criteria.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories: AIIC, DSL, ENCS, ISHL, KECI, TCSI, TSCA

Special Cases:

Inventory	Inveniorv	Status
	IECSC	Restrictions Apply

SECTION 16

OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

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

H303: May be harmful if swallowed; Acute Tox Oral, Cat 5

H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

H315: Causes skin irritation; Skin Corr/Irritation, Cat 2

H317: May cause allergic skin reaction; Skin Sensitisation, Cat 1

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H373: May cause damage to organs through prolonged or repeated exposure; Target Organ, Repeated, Cat 2

H401: Toxic to aquatic life; Acute Env Tox, Cat 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 information was modified.

Section 08: Exposure Limits Table information was modified.

Section 09: China Flash Point C(F) information was modified.

Section 11 Substance Toxicology table information was added.

Section 16: HCode Key information was modified.



Revision Date: 15 Oct 2021

Page 11 of 11

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