

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 1 of 23

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: ESSO OPTIPLUS NG
Product Description: Hydrocarbons and Additives
Product Code: 708494-60

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

Intended Use: Heating Oil Additive

Identified Uses:

Industrial Formulation and blending of fuel additives and fuels

See Section 16 for list of REACH Use Descriptors for Identified Uses shown above.

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: Esso Petroleum Company Ltd.
Ermyrn Way
Ermyrn House
KT22 8UX LEATHERHEAD, SURREY
Great Britain

Supplier General Contact:
SDS Internet Address:
E-Mail:

(UK) (+44) (0) 1372 222 000
www.msds.exxonmobil.com
sds.uk@exxonmobil.com

1.4. EMERGENCY TELEPHONE NUMBER

24 Hour Emergency Telephone:
National Poison Control Centre:

(UK) (+44) (0) 1372 222 000
(UK) 111

SECTION 2	HAZARDS IDENTIFICATION
------------------	-------------------------------

2.1. CLASSIFICATION OF SUBSTANCE OR MIXTURE

Classification according to CLP

Aspiration toxicant: Category 1., H304: May be fatal if swallowed and enters airways.
Skin irritation: Category 2., H315: Causes skin irritation.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 2 of 23

Skin Sensitiser: Category 1., H317: May cause allergic skin reaction.

Specific target organ toxicant (central nervous system): Category 3., H336: May cause drowsiness or dizziness.

Reproductive toxicant (developmental): Category 1B. Reproductive toxicant (fertility): Category 1B., H360FD: May damage fertility. May damage the unborn child.

Chronic aquatic toxicant: Category 2., H411: Toxic to aquatic life with long lasting effects.

2.2. LABEL ELEMENTS

Label elements according to CLP

Pictograms:



Signal Word: Danger

Hazard Statements:

Health:

H304: May be fatal if swallowed and enters airways.

H315: Causes skin irritation.

H317: May cause allergic skin reaction.

H336: May cause drowsiness or dizziness.

H360FD: May damage fertility. May damage the unborn child.

Environment:

H411: Toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention:

P201: Obtain special instructions before use.

P202: Do not handle until all safety precautions have been read and understood.

P261: Avoid breathing mist / vapours.

P264: Wash skin thoroughly after handling.

P271: Use only outdoors or in a well-ventilated area.

P272: Contaminated work clothing should not be allowed out of the workplace.

P273: Avoid release to the environment.

P280: Wear protective gloves and clothing.

Response:

P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

P302 + P352: IF ON SKIN: Wash with plenty of soap and water.

P304 + P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P308 + P313: IF exposed or concerned: Get medical advice/ attention.

P312: Call a POISON CENTRE or doctor/physician if you feel unwell.

P331: Do NOT induce vomiting.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 3 of 23

P333 + P313: If skin irritation or rash occurs: Get medical advice/attention.

P362 + P364: Take off contaminated clothing and wash it before reuse.

P391: Collect spillage.

Storage:

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

Disposal:

P501: Dispose of contents and container in accordance with local regulations.

Contains: Hydrocarbons, C10, aromatics, <1% naphthalene; Hydrocarbons, C10, aromatics, >1% naphthalene; Hydrocarbons, C10-C13, aromatics, <1% naphthalene; Hydrocarbons, C10-C13, aromatics, >1% naphthalene; N,N'-DISALICYLIDENE-1,2-DIAMINOPROPANE

2.3. OTHER HAZARDS

Physical / Chemical Hazards:

Material can accumulate static charges which may cause an ignition. Material can release vapours that readily form flammable mixtures. Vapour accumulation could flash and/or explode if ignited. Combustible.

Health Hazards:

High-pressure injection under skin may cause serious damage. May be irritating to the eyes, nose, throat, and lungs. Repeated exposure may cause skin dryness or cracking.

Environmental Hazards:

No additional 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
2,6-DI-TERT-BUTYL-P-CRESOL	128-37-0	204-881-4	01-2119565113-46	>= 5 - <= 10%	Aquatic Acute 1 H400 (M factor 1), Aquatic Chronic 1 H410 (M factor 1)
2-ETHYLHEXAN-1-OL	104-76-7	203-234-3	01-2119487289-20	>= 1 - <= 3%	Acute Tox. 4 H332, STOT SE 3 H335, Skin Irrit. 2 H315, Eye Irrit. 2 H319
3-METHYLBUTYL BUTYRATE	106-27-4	203-380-8	NE	>= 1 - <= 3%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Flam. Liq. 3 H226
REACTION PRODUCTS OF FATTY ACIDS, C16-18, C18 UNSATD. WITH AMINES,	-	947-263-6	01-2120761103-66	>= 1 - <= 3%	Aquatic Chronic 4 H413, Repr. 2 H361d,

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 4 of 23

POLYETHYLENEPOLY-, TRIETHYLENETETRAMINE FRACTION AND 3-(C9-C15, C12 RICH, ALK-1- ENYL)DIHYDRO-2,5-FURANDIONE					Repr. 2 H361f, Skin Irrit. 2 H315
AMINES, POLYETHYLENEPOLY-	68131-73-7	268-626-9	NE	>= 0.3 - <= 0.5%	Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Sens. 1 H317, Aquatic Acute 1 H400 (M factor 1), Aquatic Chronic 1 H410 (M factor 1), Skin Corr. 1B H314
CYCLOHEXYLDIMETHYLAMINE	98-94-2	202-715-5	NE	>= 3 - <= 5%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Acute Tox. 3 H301, Acute Tox. 3 H311, Acute Tox. 3 H331, Flam. Liq. 3 H226, Skin Corr. 1B H314
Hydrocarbons, C10, aromatics, <1% naphthalene		918-811-1	01-2119463583-34	>= 35 - <= 45%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, [Flam. Liq. 4 H227], Asp. Tox. 1 H304, EUH066, STOT SE 3 H336
N,N'-DISALICYLIDENE-1,2- DIAMINOPROPANE	94-91-7	202-374-2	NE	>= 1 - <= 3%	[Aquatic Acute 3 H402], Aquatic Chronic 3 H412, Acute Tox. 4 H302, Repr. 1B H360D, Repr. 1B H360F, Skin Sens. 1 H317
Hydrocarbons, C10, aromatics, >1% naphthalene	-	919-284-0	01-2119463588-24	>= 1 - <= 3%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, [Flam. Liq. 4 H227], Asp. Tox. 1 H304, Carc. 2 H351, EUH066, STOT SE 3 H336
Hydrocarbons, C10-C13, aromatics, <1% naphthalene		922-153-0	01-2119451097-39	>= 5 - <= 10%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Asp. Tox. 1 H304, EUH066
Hydrocarbons, C10-C13, aromatics, >1% naphthalene		926-273-4	01-2119451151-53	>= 0.5 - < 1%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Asp. Tox. 1 H304, Carc. 2 H351, EUH066
3,6,9-triazaundecamethylenediamine	112-57-2	203-986-2	NE	>= 0.3 - <= 0.5%	[Aquatic Acute 2 H401], Aquatic Chronic 2 H411, Acute Tox. 4 H302, Acute Tox. 4 H312, Skin Sens. 1 H317, Skin Corr. 1B H314

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.

Reportable hazardous constituent(s) contained in UVCB- and/or multi-constituent substance(s) complying with the classification criteria and/or with an exposure limit (OEL)

Name	CAS#	EC#	Concentration *	GHS/CLP Classification
naphthalene	91-20-3	202-049-5	< 1%	Acute Tox. 4 H302, Carc. 2 H351,

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 5 of 23

				Flam. Sol. 2 H228, Aquatic Acute 1 H400 (M factor 1), Aquatic Chronic 1 H410 (M factor 1)
--	--	--	--	---

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: Any entry in the EC# column that begins with the number "9" is a Provisional List Number provided by ECHA pending publication of the official EC Inventory Number for the substance. See Section 15 for additional CAS number information for the substance.

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

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. 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

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. Itching, pain, redness, swelling of skin. Local necrosis as evidenced by delayed onset of pain and tissue damage a few hours after injection. Itching and rash from allergic skin reaction.

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. Contains hydrocarbon solvent/petroleum hydrocarbons; skin contact may aggravate an existing dermatitis.

SECTION 5 FIRE FIGHTING MEASURES

5.1. EXTINGUISHING MEDIA

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 6 of 23

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

Unsuitable Extinguishing Media: Straight streams of water

5.2. SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

Hazardous Combustion Products: Incomplete combustion products, Nitrogen oxides, 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]: $\geq 61^{\circ}\text{C}$ (142°F) [Pensky-Martens Closed Cup]

Upper/Lower Flammable Limits (Approximate volume % in air): UEL: 6 [test method unavailable]

Autoignition Temperature: 405°C (761°F) [test method unavailable]

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. Use clean non-sparking tools to collect absorbed material.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 7 of 23

Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

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.

SECTION 7

HANDLING AND STORAGE

7.1. PRECAUTIONS FOR SAFE HANDLING

Avoid all personal contact. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated material. Use only with adequate ventilation. 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. 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. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100×10^{-12} Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

7.2. CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

The type of container used to store the material may affect static accumulation and dissipation. 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

EXPOSURE LIMIT VALUES

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 8 of 23

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

Substance Name	Form	Limit/Standard			Note	Source
2,6-DI-TERT-BUTYL-P-CRESOL		TWA	10 mg/m ³			UK EH40
2,6-DI-TERT-BUTYL-P-CRESOL	Inhalable fraction and vapour	TWA	2 mg/m ³			ACGIH
2-ETHYLHEXAN-1-OL		TWA	5.4 mg/m ³	1 ppm		UK EH40
naphthalene		TWA	10 ppm		Skin	ACGIH
3,6,9-triazaundecamethylenediamine	Aerosol.	TWA	5 mg/m ³	1 ppm	Skin	OARS WEEL

UK EH40 Workplace Exposure Limits. Exposure limits for use with Control of Substances Hazardous to Health Regulations 2002 (as amended)

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

UK Health and Safety Executive (HSE)

Biological limits:

Substance	Specimen	Sampling Time	Limit	Determinant	Source
naphthalene	Creatinine in urine	End of shift	4 µmol/mol	1-Hydroxypyrene	UK BMGV

DERIVED NO EFFECT LEVEL (DNEL)/DERIVED MINIMAL EFFECT LEVEL (DMEL)

Worker

Substance Name	Dermal	Inhalation
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	12.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	151 mg/m ³ DNEL, Chronic Exposure, Systemic Effects
Hydrocarbons, C10, aromatics, <1% naphthalene	12.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	150 mg/m ³ DNEL, Chronic Exposure, Systemic Effects
Hydrocarbons, C10, aromatics, >1% naphthalene	12.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	151 mg/m ³ DNEL, Chronic Exposure, Systemic Effects
Hydrocarbons, C10-C13, aromatics, >1% naphthalene	12.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	151 mg/m ³ DNEL, Chronic Exposure, Systemic Effects

Consumer

Substance Name	Dermal	Inhalation	Oral
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	32 mg/m ³ DNEL, Chronic Exposure, Systemic Effects	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects
Hydrocarbons, C10, aromatics, <1% naphthalene	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	32 mg/m ³ DNEL, Chronic Exposure, Systemic Effects	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects
Hydrocarbons, C10, aromatics, >1% naphthalene	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	32 mg/m ³ DNEL, Chronic Exposure, Systemic Effects	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 9 of 23

	Effects	Effects	Systemic Effects
Hydrocarbons, C10-C13, aromatics, >1% naphthalene	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects	32 mg/m3 DNEL, Chronic Exposure, Systemic Effects	7.5 mg/kg bw/day DNEL, Chronic Exposure, Systemic Effects

Note: The Derived No Effect Level (DNEL) is an estimated safe level of exposure that is derived from toxicity data in accord with specific guidance within the REACH regulation. The DNEL may differ from an Occupational Exposure Limit (OEL) for the same chemical. OELs may be recommended by an individual company, a governmental regulatory body or an expert organization, such as the Scientific Committee for Occupational Exposure Limits (SCOEL) or the American Conference of Governmental Industrial Hygienists (ACGIH). OELs are considered to be safe exposure levels for a typical worker in an occupational setting for an 8-hour work shift, 40 hour work week, as a time weighted average (TWA) or a 15 minute short-term exposure limit (STEL). While also considered to be protective of health, OELs are derived by a process different from that of REACH.

PREDICTED NO EFFECT CONCENTRATION (PNEC)

Substance Name	Aqua (fresh water)	Aqua (marine water)	Aqua (intermittent release)	Sewage treatment plant	Sediment	Soil	Oral (secondary poisoning)
Hydrocarbons, C10-C13, aromatics, <1% naphthalene	NA	NA	NA	NA	NA	NA	NA
Hydrocarbons, C10, aromatics, <1% naphthalene	NA	NA	NA	NA	NA	NA	NA
Hydrocarbons, C10, aromatics, >1% naphthalene	NA	NA	NA	NA	NA	NA	NA
Hydrocarbons, C10-C13, aromatics, >1% naphthalene	NA	NA	NA	NA	NA	NA	NA

For hydrocarbon UVCBs, no single PNEC value is identified for the overall substance or used in risk assessment calculations. Therefore, no PNEC values are disclosed in the above table. For further information, please contact ExxonMobil.

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 to stay below exposure limits.

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.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 10 of 23

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 AX 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. If contact with forearms is likely wear gauntlet style gloves. 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: 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:

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.

For Summary of Risk Management Measures across all identified uses, see Annex.

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

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 11 of 23

Odour: Characteristic
Odour Threshold: No data available
pH: Not technically feasible
Melting Point: <-60°C (-76°F) [test method unavailable]
Freezing Point: No data available
Initial Boiling Point / and Boiling Range: No data available
Flash Point [Method]: >=61°C (142°F) [Pensky-Martens Closed Cup]
Evaporation Rate (n-butyl acetate = 1): No data available
Flammability (Solid, Gas): Not technically feasible
Upper/Lower Flammable Limits (Approximate volume % in air): UEL: 6 [test method unavailable]
Vapour Pressure: 0.053 kPa (0.4 mm Hg) at 20 °C [test method unavailable]
Vapour Density (Air = 1): [No data available] [test method unavailable]
Relative Density (at 15 °C): [No data available] [test method unavailable]
Solubility(ies): water Negligible
Partition coefficient (n-Octanol/Water Partition Coefficient): No data available
Autoignition Temperature: 405°C (761°F) [test method unavailable]
Decomposition Temperature: No data available
Viscosity: 7.6 cSt (7.6 mm²/sec) at 40°C | 2.98 cSt (2.98 mm²/sec) at 100°C [test method unavailable]
Explosive Properties: None
Oxidizing Properties: None

9.2. OTHER INFORMATION

Density: 927 kg/m³ (7.74 lbs/gal, 0.93 kg/dm³)

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: Heat, sparks, flame, and build up of static electricity.

10.5. INCOMPATIBLE MATERIALS: Reducing agents, 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. Based on assessment of the components.
Irritation: No end point data for material.	Elevated temperatures or mechanical action may form vapours,

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 12 of 23

	mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.
Ingestion	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: Data available. Test scores or other study results meet criteria for classification.	Irritating to the skin. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 404
Eye	
Serious Eye Damage/Irritation: Data available. Test scores or other study results do not meet criteria for classification.	May cause mild, short-lasting discomfort to eyes. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 405
Sensitisation	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	May cause allergic skin reaction. Based on assessment of the components.
Aspiration: Data available.	May be fatal 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. Based on assessment of the components.
Carcinogenicity: No end point data for material.	Contains a substance that may cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Caused damage to fertility in laboratory animals, but the relevance to humans is uncertain. Caused damage to the fetus in laboratory animals, but the relevance to humans is uncertain. Based on assessment of the components.
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.	May cause drowsiness or dizziness. Based on assessment of the components.
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
N,N'-DISALICYLIDENE-1,2-DIAMINOPROPANE	Oral Lethality: 1350 mg/kg (Rat)
naphthalene	Inhalation Lethality: 4 hour(s) LC50 > 0.4 mg/l (Max attainable vapor conc.) (Rat); Oral Lethality: LD 50 533 mg/kg (Mouse)

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. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Contains:

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 13 of 23

2-ETHYLHEXANOL: High oral doses have been reported to cause maternal toxicity and damage to the embryo and fetus in laboratory animals. The significance of these findings to humans is uncertain. NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain.

TRIMETHYLBENZENE: Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

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 -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

12.2. PERSISTENCE AND DEGRADABILITY

Biodegradation:

Components -- Expected to be persistent.

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

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 07 03*

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 The Hazardous Waste Regulations (HWR), and subject to the provisions of those Regulations.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 14 of 23

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. UN Number: 3082

14.2. UN Proper Shipping Name (Technical Name): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol)

14.3. Transport Hazard Class(es): 9

14.4. Packing Group: III

14.5. Environmental Hazards: Yes

14.6. Special Precautions for users:

Classification Code: M6

Label(s) / Mark(s): 9, EHS

Hazard ID Number: 90

Hazchem EAC: 3Z

INLAND WATERWAYS (ADN)

14.1. UN (or ID) Number: 3082

14.2. UN Proper Shipping Name (Technical Name): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol)

14.3. Transport Hazard Class(es): 9

14.4. Packing Group: III

14.5. Environmental Hazards: Yes

14.6. Special Precautions for users:

Hazard ID Number: 90

Label(s) / Mark(s): 9 (CMR, N2, F), EHS

SEA (IMDG)

14.1. UN Number: 3082

14.2. UN Proper Shipping Name (Technical Name): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol)

14.3. Transport Hazard Class(es): 9

14.4. Packing Group: III

14.5. Environmental Hazards: Marine Pollutant

14.6. Special Precautions for users:

Label(s): 9

EMS Number: F-A, S-F

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol), 9, PG III, (61°C c.c.), MARINE POLLUTANT

Footnote: Not subject to the provisions of UN3082 Environmentally hazardous substances liquid, n.o.s., if

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 15 of 23

shipped in quantities of 5 liters or less per single or inner combination packaging as per IMDG code 2.10.2.7.

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. UN Number: 3082

14.2. UN Proper Shipping Name (Technical Name): ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol)

14.3. Transport Hazard Class(es): 9

14.4. Packing Group: III

14.5. Environmental Hazards: Yes

14.6. Special Precautions for users:

Label(s) / Mark(s): 9, EHS

Transport Document Name: UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Heavy aromatic petroleum solvent, Alkyl phenol), 9, PG III

[Footnote: Not subject to the provisions of UN3082 Environmentally hazardous substances liquid, n.o.s., if shipped in quantities of 5 liters or less per single or inner combination packaging as per Special Provision A197.]

SECTION 15

REGULATORY INFORMATION

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories : AIIIC, DSL, IECSC, PICCS, TCSI, TSCA

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]

Annex XVII restrictions on the manufacture, placing on the market and use of certain dangerous substances, preparations and articles identified in REACH [... Registration, Evaluation, Authorisation and Restrictions of Chemicals ... and amendments thereto]

Health and Safety at Work etc. Act [...pregnant workers...recently given birth...breastfeeding ...]

Health and Safety at Work etc. Act [... protection of young people at work ...]

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.

The Control of Substances Hazardous to Health (COSHH) Regulations [...protection of workers from the risks of chemical agents at work...]. Refer to legislation for details of requirements.

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

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 16 of 23

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

The following entries of Annex XVII may be considered for this product: None

15.2. CHEMICAL SAFETY ASSESSMENT

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

SECTION 16	OTHER INFORMATION
------------	-------------------

IDENTIFIED USES:

Industrial Formulation and blending of fuel additives and fuels (PROC1, PROC15, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, SU10)

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

Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 17 of 23

Classification according to CLP

Classification according to CLP	Classification procedure
Aquatic Chronic 2; H411	Calculation
Asp. Tox. 1; H304	Based on test data
Repr. 1B; H360D	Calculation
Repr. 1B; H360F	Calculation
Skin Irrit. 2; H315	Based on test data
Skin Sens. 1; H317	Calculation
STOT SE 3; H336	Calculation

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

Flam. Liq. 3 H226: Flammable liquid and vapor; Flammable Liquid, Cat 3
[Flam. Liq. 4 H227]: Combustible liquid; Flammable Liquid, Cat 4
Flam. Sol. 2 H228: Flammable solid; Flammable Solid, Cat 2
Acute Tox. 3 H301: Toxic if swallowed; Acute Tox Oral, Cat 3
Acute Tox. 4 H302: Harmful if swallowed; Acute Tox Oral, Cat 4
Asp. Tox. 1 H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
Acute Tox. 3 H311: Toxic in contact with skin; Acute Tox Dermal, Cat 3
Acute Tox. 4 H312: Harmful in contact with skin; Acute Tox Dermal, Cat 4
Skin Corr. 1B H314: Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B
Skin Irrit. 2 H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
Skin Sens. 1 H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
Eye Irrit. 2 H319: Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2
Acute Tox. 3 H331: Toxic if inhaled; Acute Tox Inh, Cat 3
Acute Tox. 4 H332: Harmful if inhaled; Acute Tox Inh, Cat 4
STOT SE 3 H335: May cause respiratory irritation; Target Organ Single, Resp Irr
STOT SE 3 H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic
Carc. 2 H351: Suspected of causing cancer; GHS Carcinogenicity, Cat 2
Repr. 1B H360D: May damage the unborn child; Repro Tox, Cat 1B (Develop)
Repr. 1B H360F: May damage fertility; Repro Tox, Cat 1B (Fertility)
Repr. 2 H361d: Suspected of damaging the unborn child; Repro Tox, Cat 2 (Develop)
Repr. 2 H361f: Suspected of damaging fertility; Repro Tox, Cat 2 (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 Acute 3 H402]: Harmful to aquatic life; Acute Env Tox, Cat 3
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
Aquatic Chronic 3 H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3
Aquatic Chronic 4 H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4
EUH066: Repeated exposure may cause skin dryness or cracking.

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

CLP Classification information was added.
Composition: Component Table for REACH information was modified.
Composition: Concentration Footnote information was deleted.
dnel table - consumer information was added.
dnel table - worker information was added.
dnel table notes information was added.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 18 of 23

GHS Environmental Classification information was deleted.
GHS Environmental Hazards information was added.
GHS Environmental Hazards information was deleted.
GHS Environmental Symbol information was deleted.
GHS Health Classification information was deleted.
GHS Health Hazards information was added.
GHS Health Hazards information was deleted.
GHS Health Symbol information was deleted.
GHS Precautionary Statements - Disposal information was added.
GHS Precautionary Statements - Disposal information was deleted.
GHS Precautionary Statements - Prevention information was added.
GHS Precautionary Statements - Prevention information was deleted.
GHS Precautionary Statements - Response information was added.
GHS Precautionary Statements - Response information was deleted.
GHS Precautionary Statements - Storage information was added.
GHS Precautionary Statements - Storage information was deleted.
GHS Signal Word information was added.
GHS Signal Word information was deleted.
GHS Symbol information was added.
GHS Target Organ Phrase information was deleted.
Hazard Identification: Physical/Chemical Hazard information was modified.
Hazard Identification: Section 3 Footnotes for CLP tables information was modified.
Industrial Formulation and blending of fuel additives and fuels: Annex Information information was added.
Industrial Formulation and blending of fuel additives and fuels: Section 1: Use Table information was added.
PNEC table information was added.
Section 01: Product Identified Use Section 16 statement information was added.
Section 02: GHS (REACH Registration Name) Contains for LABEL_GHS codes information was modified.
Section 06: Protective Measures information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 08: Exposure Limits Table information was modified.
Section 08: Personal protection - risk management measures statement information was added.
Section 08: PNEC notes information was added.
Section 09: Flammable Limits - LEL information was deleted.
Section 09: Flammable Limits - UEL information was modified.
Section 09: Flash Point °C(°F) information was modified.
Section 09: LEL Flammability test method information was added.
Section 09: Viscosity information was modified.
Section 11 Substance Toxicology table information was modified.
Section 11: Carcinogen Conclusion information was modified.
Section 11: Dermal Irritation Test Comment information was modified.
Section 11: Dermal Irritation Test Data information was modified.
Section 11: Eye Irritation Test Comment information was modified.
Section 11: Eye Irritation Test Data information was modified.
Section 11: Eye Irritation Test Guideline information was added.
Section 11: Skin Irritation Test Guideline information was added.
Section 13: European Waste Code Hazardous Note information was modified.
Section 14: IATA Footnote information was added.
Section 14: IMDG Footnote information was added.
Section 15: EU Directives and Regulations information was modified.
Section 15: National Chemical Inventory Listing information was modified.
Section 15: REACH Annex XVII data information was added.

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 19 of 23

Section 15: REACH Chemical Safety Assessment statement information was modified.

Section 16: Classification CLP/GHS Table information was modified.

Section 16: HCode Key information was modified.

Section 3: ECHA footnote information was added.

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

Internal Use Only

MHC: 2A, 0, 0, 0, 4, 1

PPEC: CV

DGN: 7096237XGB (1016916)

ANNEX

Annex not required for this material.

Section 1 Exposure Scenario Title

Title:

Industrial Formulation and blending of fuel additives and fuels

Use Descriptor

Sector(s) of Use SU10

Process Categories PROC1, PROC15, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9

Environmental Release Categories ERC2, ERC7

Specific Environmental Release Category

Processes, tasks, activities covered

Includes material transfers, mixing, large and small scale packing, sampling, maintenance and associated laboratory activities.

Section 2 Operational conditions and risk management measures

Section 2.1 Control of worker exposure

Product Characteristic

Liquid

Duration, frequency and amount

Covers daily exposures up to 8 hours (unless stated differently)[G2]

Covers daily use up to 5 workdays/week

Covers percentage substance in the product up to 25 %.[G12]

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 20 of 23

Other given operational conditions affecting workers exposure

Assumes a good basic standard of occupational hygiene is implemented [G1]

Contributing Scenarios/

Specific Risk Management Measures and Operating Conditions

(only required controls to demonstrate safe use listed)

General measures applicable to all activities PROC1

Use only with adequate ventilation. Use process enclosures, local exhaust ventilation to keep worker exposure to airborne contaminants below any recommended or statutory limits. Use appropriate respiratory protection if there is the potential to exceed the exposure limit(s). Seek professional advice prior to respirator selection and use. Select respirator based on its suitability to provide adequate worker protection for given working conditions and level of airborne contamination.

Ensure operatives are trained to minimise exposures.

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

If above technical/organisational control measures are not feasible, then adopt following PPE:

Chemical splash goggles. Goggles with a face shield may be necessary depending on quantity of material and conditions of use. [PPE35]

Wear suitable coveralls to prevent exposure to the skin.

Formulation and blending of fuel additives and fuels PROC1

Avoid carrying out operation for more than 4 hours.

Indoor

Formulation and blending of fuel additives and fuels PROC2

Avoid carrying out operation for more than 4 hours.

Indoor

Formulation and blending of fuel additives and fuels PROC3

Avoid carrying out operation for more than 4 hours.

Indoor

Formulation and blending of fuel additives and fuels PROC4

Avoid carrying out operation for more than 4 hours.

Indoor

Formulation and blending of fuel additives and fuels PROC5

Avoid carrying out operation for more than 4 hours.

Indoor

Filling / preparation of equipment from drums or containers PROC8b

Avoid carrying out activities involving exposure for more than 1 hour.

Outdoor.

Drum and small package filling PROC9

Indoor

Avoid carrying out activities involving exposure for more than 4 hours.

Process sampling PROC5

Indoor

Avoid carrying out activities involving exposure for more than 15 minutes.

Process sampling PROC8a

Indoor

Avoid carrying out activities involving exposure for more than 15 minutes.

Bulk transfers PROC8a

Avoid carrying out operation for more than 2 hours.

Outdoor.

Bulk transfers PROC8b

Avoid carrying out operation for more than 2 hours.

Outdoor.

Equipment cleaning and maintenance PROC8a

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 21 of 23

Indoor

Avoid carrying out activities involving exposure for more than 1 hour.

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

Equipment cleaning and maintenance PROC8b

Indoor

Avoid carrying out activities involving exposure for more than 1 hour.

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

Disposal of wastes PROC8a

Indoor

Avoid carrying out activities involving exposure for more than 1 hour.

Disposal of wastes PROC8b

Indoor

Avoid carrying out activities involving exposure for more than 1 hour.

Laboratory activities PROC15

Indoor

Handle in a fume cupboard or under extract ventilation.

Ensure operatives are trained to minimise exposures.

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Wear chemical-resistant safety glasses. Wear appropriate lab clothing when handling.

Storage PROC1

Indoor

No other specific measures identified.

8 hour (full shift)

Storage PROC2

Avoid carrying out activities involving exposure for more than 15 minutes.

Indoor

Section 2.2 Control of environmental exposure

Product characteristics

Not applicable

Duration, frequency and amount

Covers daily use up to: 300 days/yr

Covers percentage substance in the product up to 10%.

Fraction of EU tonnage used in region: 100 %

Environmental factors not influenced by risk management

Local freshwater dilution factor [EF1] 10

Local marine water dilution factor: [EF2] 100

Other given operational conditions affecting environmental exposure

Negligible wastewater emissions as process operates without water contact.

Technical conditions and measures at process level (source) to prevent release

Not applicable

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil

Treat air emissions to provide a typical removal (or abatement?) efficiency of: 90 %

User sites are assumed to be provided with oil/water separators or equivalent and for waste water to be discharged via public sewer system.

Organisation measures to prevent/limit release from site

Do not apply industrial sludge to natural soils.

Prevent discharge of undissolved substance to or recover from wastewater.

Sludge should be incinerated, contained or reclaimed.

Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant effluent flow is:[STP5] 2000 m3/day

Product Name: ESSO OPTIPLUS NG

Revision Date: 09 Jul 2021

Revision Number: 3.00

Page 22 of 23

Conditions and measures related to external treatment of waste for disposal
External treatment and disposal of waste should comply with applicable local and/or national regulations [ETW3]
Conditions and measures related to external recovery of waste
Not applicable
Section 3 Exposure Estimation
3.1. Health
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated [G21]
3.2. Environment
Not applicable
Section 4 Guidance to check compliance with the Exposure Scenario
4.1. Health
Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Ensure that eyewash stations and safety showers are close to the workstation location. Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. [G22] Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Do not eat, drink or smoke when using this product. Wash hands, forearms and face thoroughly after handling products, before eating, smoking and using the lavatory and at end of working period. Appropriate techniques should be used to remove potentially contaminated clothing. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.[G23]
4.2. Environment
Dispose waste product or used containers according to local regulations. Do not empty into drains; dispose of material and its container in a safe way. Do not allow uncontrolled discharge of product into environment. Municipal sewage treatment plant assumed. Further details on scaling and control technologies are provided in factsheet Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e. RCRs >1), additional RMMs or a site-specific chemical safety assessment is required.



Product Name: ESSO OPTIPLUS NG
Revision Date: 09 Jul 2021
Revision Number: 3.00
Page 23 of 23
