

Product Name: OXO ALCOHOL UNIT STREAMS FLAMMABLE
Revision Date: 08 Feb 2018
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SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: OXO ALCOHOL UNIT STREAMS FLAMMABLE
Product Description: Aliphatic / Olefinic Hydrocarbons

Recommended Use: Manufacturing Use Only - Not for Commercial Use

COMPANY IDENTIFICATION

Supplier: ExxonMobil Chemical Asia Pacific (Regn. No. 52893724C)
(A Division Of ExxonMobil Asia Pacific Ptd Ltd - Regn. No. 196800312N)
Singapore Chemical Plant
100 Jurong Island Highway 627867 Singapore

24 Hour Emergency Telephone
Supplier General Contact

800-101-2201
+65 6885 8124

SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

CLASSIFICATION:

Flammable liquid: Category 1.
Acute oral toxicant: Category 4. Acute dermal toxicant: Category 4. Acute inhalation toxicant: Category 4. Skin corrosion: Category 1B. Serious eye damage: Category 1. Respiratory Sensitizer: Category 1. Skin Sensitizer: Category 1. Specific target organ toxicant (single exposure): Category 1. Specific target organ toxicant (central nervous system): Category 3. Aspiration toxicant: Category 1.
Acute aquatic toxicant: Category 1. Chronic aquatic toxicant: Category 1.

LABEL:

Symbol:



**Signal Word:** Danger**Hazard Statements:**

Physical: H224: Extremely flammable liquid and vapour.

Health: H302: Harmful if swallowed. H304: May be fatal if swallowed and enters airways. H312: Harmful in contact with skin. H314: Causes severe skin burns and eye damage. H317: May cause an allergic skin reaction. H318: Causes serious eye damage. H332: Harmful if inhaled. H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled. H336: May cause drowsiness or dizziness. H370: Causes damage to organs. Eye, Central Nervous system

Environmental: H410: Very toxic to aquatic life with long lasting effects.

Precautionary Statements:

Prevention: P210: Keep away from heat/sparks/open flames/hot surfaces. -- No smoking. P233: Keep container tightly closed. P240: Ground/bond container and receiving equipment. P241: Use explosion-proof electrical, ventilating and lighting equipment. P242: Use only non-sparking tools. P243: Take precautionary measures against static discharge. P260: Do not breathe mist / vapours. P264: Wash skin thoroughly after handling. P270: Do not eat, drink or smoke when using this product. 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/protective clothing/eye protection/face protection. P284: Wear respiratory protection.

Response: P301 + P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P301 + P330 + P331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. 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. P305 + P351 + P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P310: Immediately call a POISON CENTER/doctor/physician. P333 + P313: If skin irritation or rash occurs: Get medical advice/attention. P342 + P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. P362 + P364: Take off contaminated clothing and wash it before reuse. P370 + P378: In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish. P391: Collect spillage.

Storage: P403 + P235: Store in a well-ventilated place. Keep cool. P405: Store locked up.

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

Contains: 1-OCTENE; COBALT FORMATE; FORMIC ACID; METHYL ALCOHOL; NONANE; NONANOL; OCTANE**Other hazard information:****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.

HEALTH HAZARDS

May be irritating to nose, throat, and lungs. May cause central nervous system depression.

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ENVIRONMENTAL HAZARDS

No additional 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	872-05-9	0 - 10%	H226, H304, H336
1-HEXENE	592-41-6	0 - 20%	H225, H304, H401, H411
1-OCTENE	111-66-0	< 99.9%	H225, H304, H336, H315, H401, H411
ALKENES, C11-13, C12-RICH	68526-58-9	< 99.9%	H226, H304, H400(M factor 1), H410(M factor 1)
ALKENES, C14-20 ALPHA	68855-60-7	0 - 15%	H304
ALKENES, C7-C9, C8 RICH	68526-54-5	< 99.9%	H225, H304, H316, H400(M factor 1), H410(M factor 1)
BUTANE	106-97-8	0 - 80%	H220, H280
BUTENE, 1-	106-98-9	0 - 80%	H220, H280, H402
CARBON DIOXIDE	124-38-9	0 - 5%	H280
COBALT FORMATE	544-18-3	0 - 10%	H302, H317, H334, H318, H402, H412
DODECENE, HYDROFORMULATION PRODUCTS, HIGH BOILING	68526-91-0	0 - 90%	H316, H320(2B), H317
FORMIC ACID	64-18-6	0 - 5%	H314(1A)
FORMIC ACID, OCTYL ESTER	112-32-3	0 - 30%	H401
HYDROGEN	1333-74-0	0 - 10%	H220, H280
ISOBUTANE	75-28-5	0 - 10%	H220, H280
ISOBUTYLENE	115-11-7	0 - 10%	H220, H280, H402
METHANE	74-82-8	0 - 5%	H220, H280
METHYL ALCOHOL	67-56-1	0 - 20%	H225, H301, H311, H331, H370
NITROGEN	7727-37-9	0 - 5%	None
NONANAL	124-19-6	0 - 80%	H315, H401, H411
NONANE	111-84-2	0 - 70%	H226, H304, H336, H315, H400(M factor 1), H410(M factor 1)
NONANOL	28473-21-4	0 - 90%	H303, H305, H316, H318, H401
NONENE	27215-95-8	0 - 70%	H304, H315, H319(2A)
NONENE, HYDROFORMULATION PRODUCTS, HIGH BOILING	68526-90-9	0 - 70%	H316, H320(2B), H317
OCTANE	111-65-9	< 99.9%	H225, H304, H336, H315, H400(M factor 1), H410(M factor 1)
OXYGEN	7782-44-7	0 - 2%	H270, H280
PENTENE-1	109-67-1	0 - 10%	H226
PROPYLENE	115-07-1	0 - 10%	H220, H280, H402

* All concentrations are percent by weight.

SECTION 4	FIRST AID MEASURES
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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. Wash carefully behind ears, under nails and in skin folds. Get medical assistance. For those providing assistance, avoid further skin contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered.

EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get immediate medical assistance. If medical assistance is not immediately available, flush an additional 15 minutes.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

SECTION 5	FIRE FIGHTING MEASURES
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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. If a leak or spill has not ignited, use water spray to disperse the vapours and to protect personnel attempting to stop a leak. 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: Extremely Flammable. Vapour is flammable and heavier than air. Vapour may travel across the ground and reach remote ignition sources, causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

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

FLAMMABILITY PROPERTIES

Flash Point [Method]: -250°C (-418°F) [Estimated]

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Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6	ACCIDENTAL RELEASE MEASURES
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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.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of the spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that provide chemical resistance and, when necessary, heat-resistance and/or thermal insulation are recommended. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Small spills: normal work clothes are usually adequate. Large spills: full body suit of chemical and thermal resistant material is recommended. Chemical goggles and face shield are recommended if contact with liquefied gas is possible.

SPILL MANAGEMENT

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. Fully encapsulating, vapour-protective clothing should be worn for spills and leaks with no fire. Use clean non-sparking tools to collect absorbed material. Ventilate the area. Absorb with earth, sand or other non-combustible material and transfer to containers (except for Hydrazine). Allow substance to evaporate. Large Spills: Water spray may reduce vapour, but may not prevent ignition in enclosed spaces.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do so without risk. 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.

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
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HANDLING

Avoid all personal contact. Prevent exposure to ignition sources, for example use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapour may be evolved from heated or agitated

material. Use only with adequate ventilation. Do not enter storage areas or confined spaces unless adequately ventilated. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or ground procedures. However, bonding and grounds 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 (100x10E-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.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. 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. Outside or detached storage preferred. 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.

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
1-DECENE		TWA	574 mg/m3	100 ppm		OARS WEEL	2016
1-HEXENE		TWA	50 ppm			ACGIH	2017
1-OCTENE		TWA	344 mg/m3	75 ppm		OARS WEEL	2016
ALKENES, C11-13, C12-RICH		TWA	350 mg/m3			ExxonMobil	2017
ALKENES, C7-C9, C8 RICH		TWA	350 mg/m3			ExxonMobil	2017
BUTANE		TWA	1900 mg/m3	800 ppm		Singapore PELs	2006
BUTANE		STEL	1000 ppm			ACGIH	2017
BUTENE, 1-		TWA	250 ppm			ACGIH	2017
CARBON DIOXIDE		STEL	54000 mg/m3	30000 ppm		Singapore PELs	2006
CARBON DIOXIDE		TWA	9000 mg/m3	5000 ppm		Singapore PELs	2006
CARBON DIOXIDE		STEL	30000 ppm			ACGIH	2017
CARBON DIOXIDE		TWA	5000 ppm			ACGIH	2017
COBALT FORMATE [as Co]		TWA	0.02 mg/m3			Singapore PELs	2006
COBALT FORMATE [as Co]		TWA	0.02 mg/m3			ACGIH	2017

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FORMIC ACID		STEL	19 mg/m ³	10 ppm		Singapore PELs	2006
FORMIC ACID		TWA	9.4 mg/m ³	5 ppm		Singapore PELs	2006
FORMIC ACID		STEL	10 ppm			ACGIH	2017
FORMIC ACID		TWA	5 ppm			ACGIH	2017
HYDROGEN		Limit value not establis hed			Simple asphyxiant.	ACGIH	2017
ISOBUTANE		STEL	1000 ppm			ACGIH	2017
ISOBUTYLENE		TWA	250 ppm			ACGIH	2017
METHYL ALCOHOL		STEL	328 mg/m ³	250 ppm		Singapore PELs	2006
METHYL ALCOHOL		TWA	262 mg/m ³	200 ppm		Singapore PELs	2006
METHYL ALCOHOL		STEL	250 ppm		Skin	ACGIH	2017
METHYL ALCOHOL		TWA	200 ppm		Skin	ACGIH	2017
NITROGEN		Limit value not establis hed			Simple asphyxiant.	ACGIH	2017
NONANE		TWA	1050 mg/m ³	200 ppm		Singapore PELs	2006
NONANE		TWA	200 ppm			ACGIH	2017
OCTANE		STEL	1750 mg/m ³	375 ppm		Singapore PELs	2006
OCTANE		TWA	1400 mg/m ³	300 ppm		Singapore PELs	2006
OCTANE		TWA	300 ppm			ACGIH	2017
PROPYLENE		TWA	500 ppm			ACGIH	2017

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:

Adequate ventilation should be provided so that exposure limits are not exceeded. Use explosion-proof ventilation equipment. Eye washes and showers for emergency use.

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 chemical cartridge respirator Type AX filter material.

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, Viton

Eye Protection: Chemical goggles and face shield 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. Full body suit and boots are recommended when handling large volumes or in emergency situations.

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.

GENERAL INFORMATION

Physical State: Liquid
Form: Clear
Colour: Colourless
Odour: Alcohol
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density: N/D
Flammability (Solid, Gas): N/D
Flash Point [Method]: -250°C (-418°F) [Estimated]

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Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: -253°C (-423°F) - 259°C (498°F)
Decomposition Temperature: N/D
Vapour Density (Air = 1): > 1 at 101 kPa
Vapour Pressure: > 101.08 kPa (760 mm Hg) at 20 °C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/D
Log Pow (n-Octanol/Water Partition Coefficient): N/D
Solubility in Water: Appreciable
Viscosity: [N/D at 40 °C]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: 0°C (32°F)
Melting Point: N/A
Hygroscopic: No

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

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

Hazard Class	Conclusion / Remarks
Inhalation	
Acute Toxicity: No end point data for material.	Slightly Toxic. Based on assessment of the components.
Irritation: No end point data for material.	May be irritating to the respiratory tract. The effects are irreversible. Based on assessment of the components.
Ingestion	
Acute Toxicity: No end point data for material.	Slightly Toxic. Based on assessment of the components.
Skin	
Acute Toxicity: No end point data for material.	Slightly Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Corrosive to eyes and skin. May cause permanent damage. Based on assessment of the components.
Eye	
Serious Eye Damage/Irritation: No end point data for material.	Severely irritating, and may seriously damage eye tissue. Based on assessment of the components.

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Sensitisation	
Respiratory Sensitization: No end point data for material.	May cause allergy or asthma symptoms or breathing difficulties if inhaled. Based on assessment of the components.
Skin Sensitization: No end point data for material.	May cause allergic skin reaction. Based on assessment of the components.
Aspiration: No end point data for material.	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.	Not expected to cause cancer. Based on assessment of the components.
Reproductive Toxicity: No end point data for material.	Not expected to be a reproductive toxicant. 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.	Causes organ damage from a single exposure. 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
FORMIC ACID	Oral Lethality: LD 50 1.21 g/kg (Rat)

OTHER INFORMATION

For the product itself:

Target Organs Single Exposure: Eye, Central Nervous system

Exposure to this material, or one of its components, in situations where there is the potential for high levels, such as in confined spaces or with abuse, may result in abnormal heart rhythm (arrhythmia). High-level exposure to hydrocarbons (above occupational exposure limits) may initiate arrhythmia in a worker that is undergoing stress or is taking a heart-stimulating substance such as epinephrine, a nasal decongestant, or an asthma or cardiovascular drug.

Contains:

Cobalt compounds: Some compounds caused tumours and reproductive effects in laboratory animals. May cause dermatitis and skin sensitisation. Inhalation of dusts can result in respiratory irritation, pneumoconiosis and asthma. METHANOL: Human exposure to methanol may result in illness, systemic poisoning, blindness, optic nerve damage and perhaps death, after being ingested, absorbed through the skin or inhaled. Death due to cardiac or respiratory failure has been reported in some cases from consumption of as little as 30 mls. Exposure to high concentrations of methanol has been shown to cause developmental effects in rodent offspring.

IARC Classification:

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
COBALT FORMATE	544-18-3	3

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

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

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

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.

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 Material not assessed for this transportation mode.

SEA (IMDG): Material not assessed for this transportation mode.

Marine Pollutant: Not Determined

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AIR (IATA): Material not assessed for this transportation mode.**SECTION 15 REGULATORY INFORMATION**

Material is hazardous as defined by Specification for hazard communication for hazardous chemicals and dangerous goods (Singapore Standard SS586) Part 2:2014 - Globally harmonised system of classification and labelling of chemicals - Singapore's adaptations.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Listed or exempt from listing/notification on the following chemical inventories: N/D

National Laws and Regulations:

Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
MPA (Dangerous Goods, Petroleum and Explosives) Regulations
Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations

Environmental Protection and Management Act & Environmental Protection and Management
(Hazardous Substances) Regulations

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):

H220: Extremely flammable gas; Flammable Gas, Cat 1
H225: Highly flammable liquid and vapor; Flammable Liquid, Cat 2
H226: Flammable liquid and vapour; Flammable Liquid, Cat 3
H270: May cause or intensify fire; oxidizer; Oxidizing Gas, Cat 1
H280: Contains gas under pressure; may explode if heated; Pressurized Gas
H301: Toxic if swallowed; Acute Tox Oral, Cat 3
H302: Harmful if swallowed; Acute Tox Oral, Cat 4
H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1
H305: May be harmful if swallowed and enters airways; Aspiration, Cat 2
H311: Toxic in contact with skin; Acute Tox Dermal, Cat 3
H314(1A): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1A
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
H316: Causes mild skin irritation; Skin Corr/Irritation, Cat 3
H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
H319(2A): Causes serious eye irritation; Serious Eye Damage/Irr, Cat 2A
H331: Toxic if inhaled; Acute Tox Inh, Cat 3
H334: May cause allergic or asthmatic symptoms or breathing difficulties if inhaled; Respiratory Sens, Cat 1
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic
H370: Causes damage to organs; Target Organ, Single, Cat 1
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1
H401: Toxic to aquatic life; Acute Env Tox, Cat 2
H402: Harmful to aquatic life; Acute Env Tox, Cat 3
H410: Very toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 1

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H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Composition: Component Table information was modified.
GHS Health Hazards information was modified.
GHS Physical Hazards information was modified.
GHS Precautionary Statements - Prevention information was modified.
GHS Precautionary Statements - Storage information was modified.
Section 06: Accidental Release - Spill Management - Land information was modified.
Section 06: Accidental Release Measures - Environmental Precautions information was modified.
Section 07: Handling and Storage - Handling information was modified.
Section 08: Exposure Limits Table information was modified.
Section 08: Hand Protection CEN Standards - AP information was added.
Section 08: Respiratory CEN Standards - AP information was added.
Section 08: Skin and Body Protection information was modified.
Section 11: Chronic Tox - Component information was modified.
Section 11: Ingestion Lethality Conclusion information was modified.
Section 12: Ecological Information - Acute Aquatic Toxicity information was added.
Section 12: Ecological Information - Acute Aquatic Toxicity information was deleted.
Section 16: HCode Key information was modified.

THIS SDS COVERS THE FOLLOWING MATERIALS: SPA ACT40 | SPA ACT40 OUTLET | SPA ADE43 | SPA ADT30OVHD | SPA ADT40 BTMS | SPA ADT40_BTMS | SPA AHD01, AHD60 | SPA AHR15/20/30 | SPA ASP12 / ASD11 | SPA AST10 OVHD | SPA ATTK 24/ 25 | SPA ATTK03 | SPA ATTK04 | SPA ATTK05 | SPA ATTK06 | SPA OCTENE DAY TANK 05 | SPA ADR10 A/B/C/D | SPA ADT30 OVHD, SPA ATTK 04 | SPA AHR10 A/B | SPA AHR15/20/30 OUTLET | SPA C12+ EX ADE43, ADT30_BTMS | SPA C14+ EX ADE44 | SPA DECOBALTER WATER EX ACD40 | SPA DIMER REACTOR EFFLUENT | SPA DIMER S/U TANK 06 | SPA DODECENE EX-ADE43 | SPA DODECENE TO MOGAS, ADT40 OVHD | SPA HEAVIES C16+ TO FUEL OIL | SPA HEAVIES TO FUEL OIL | SPA HEAVY OLEFIN FRACTIONS | SPA HOF | SPA HYDRO FEED TK03 | SPA HYDRO FEED, AHP04 | SPA HYDRO PRODUCT | SPA INA | SPA INA DAY TANKS | SPA INA MARINE SHIPPING, ATTK24/25 | SPA ISONONYL ALCOHOL | SPA ISOPAR L | SPA ISOPAR PRODUCT, ASE14 | SPA LIGHT BY PRODUCTS | SPA LIGHT OXO-FRACTIONS, AFT10/10A, INA EX FT20 ALCOHOL FRACTIONATOR OVERHEAD, AFT20-AFO, INA FINISHING PRODUCT, AFP60R | SPA LOF | SPA OCTENE | SPA OCTENE IMPORT | SPA OCTENE PRODUCT EX ADE33R | SPA OCTENE TO MOGAS | SPA OCTENE/LOF TANK 04

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