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MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

As of the revision date above, this (M)SDS meets the regulations in India.

PRODUCT

Product Name: MOBILCUT 147
Product Description: Base Oil and Additives
Product Code: 2015703010G0, 660464
Intended Use: Water-miscible cutting fluid

COMPANY IDENTIFICATION

Supplier: ExxonMobil Lubricants Private Limited
4th Floor, Building Number 10, Tower C
DLF Cyber City, DLF Phase-II
Gurgaon - 122 002
Haryana India

Supplier General Contact +91-124-4951300

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

This material is regulated as a preparation.

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*	Symbols/Risk Phrases
2-PROPANOL, 1-(2-BUTOXY-1-METHYLETHOXY)-,	29911-28-2	5 - 10%	Xn;R22
BORIC ACID (H ₃ BO ₃) COMPD. WITH 2,2'-IMINOBISETHANOL}	67952-33-4	5 - 10%	Xi;R36/38
CARBAMIC ACID, BUTYL-, 3-iodo-2-propynyl ester	55406-53-6	0.1 - 1%	Xn;R20/22, Xi;R41, N;R50
FATTY ACIDS, TALL OIL, COMPDS. WITH DIETHANOLAMINE	61790-66-7	5 - 10%	Xi;R36/38
TALL OIL FATTY ACIDS, DIETHANOLAMIDE	68155-20-4	5 - 10%	Xi;R36/38

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

SECTION 3 HAZARDS IDENTIFICATION

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

CLASSIFICATION: | Xi; R36/38 |

HEALTH HAZARDS

Irritating to eyes and skin. Mists may be irritating to the eyes, nose, throat, and lungs. High-pressure injection under skin may cause serious damage.

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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 4	FIRST AID MEASURES
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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. 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 for at least 15 minutes. Get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

Pre-existing conditions which may be aggravated by exposure include emphysema and asthma.

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. 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: Pressurised mists may form a flammable mixture. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

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

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FLAMMABILITY PROPERTIES

Flash Point [Method]: >100°C (212°F) [ASTM D-93]

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

Autoignition Temperature: >150°C (302°F)

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. 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.

SPILL MANAGEMENT

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. Seek advice of a specialist. This product emulsifies, disperses or is miscible in water.

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 breathing mists or vapour. Avoid contact with skin. Avoid contact with eyes. Small metal particles from machining may cause abrasion of the skin and may predispose to dermatitis. 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

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Do not allow material to freeze. The container choice, for example storage vessel, may effect static accumulation and dissipation. Do not store in open or unlabelled containers.

Unsuitable Containers/Packing: Copper; Aluminium; Zinc

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
BORIC ACID (H ₃ BO ₃) COMPD. WITH 2,2'-IMINOBIS{ETHANOL}	Inhalable fraction.	STEL	6 mg/m ³			ACGIH
BORIC ACID (H ₃ BO ₃) COMPD. WITH 2,2'-IMINOBIS{ETHANOL}	Inhalable fraction.	TWA	2 mg/m ³			ACGIH
Formaldehyde		STEL	3 mg/m ³	2 ppm		India OELs
Formaldehyde		TWA	1.5 mg/m ³	1 ppm		India OELs
Formaldehyde		Ceiling	0.3 ppm		Sensitizer	ACGIH

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:

Particulate air-purifying respirator approved for dust or oil mist is recommended.

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

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include:

Chemical resistant gloves are recommended. Neoprene, Nitrile, Polyvinyl Chloride (PVC)

Eye Protection: Chemical type goggles should be worn during misting operations. Chemical goggles are recommended.

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

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

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

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

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

GENERAL INFORMATION

Physical State: Liquid

Colour: Amber

Odour: Characteristic

Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 20 °C): 0.95

Flash Point [Method]: >100°C (212°F) [ASTM D-93]

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

Autoignition Temperature: >150°C (302°F)

Boiling Point / Range: > 100°C (212°F)

Vapour Density (Air = 1): > 1 at 101 kPa

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

Evaporation Rate (n-butyl acetate = 1): < 1

pH: 9.1

Log Pow (n-Octanol/Water Partition Coefficient): N/D

Solubility in Water: Emulsifies

Viscosity: 22 cSt (22 mm²/sec) at 40°C

Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D

Melting Point: N/A

Pour Point: < 0°C (32°F)

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SECTION 10	STABILITY AND REACTIVITY
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STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: High energy sources of ignition., Heat/ Freezing temperatures.

MATERIALS TO AVOID: Strong oxidisers, Strong Acids

HAZARDOUS DECOMPOSITION PRODUCTS: Formaldehyde

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11	TOXICOLOGICAL INFORMATION
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ACUTE TOXICITY

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
Inhalation	
Toxicity: No end point data.	Not determined.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Irritating to the skin. Based on assessment of the components.
Eye	
Irritation (Rabbit): Data available.	Irritating and will injure eye tissue. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

For the product itself:

Oil Mist (highly refined oils): Animals exposed to high concentrations of mist developed oil retention, inflammation, and oil granulomas in the respiratory tract. Oils exposed to high temperatures, cracking conditions, or mixing with tramp / used oils may introduce polycyclic aromatic compounds or microbial contaminants that could result in cancer or severe respiratory hazards.

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

Additional information is available by request.

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IARC Classification:

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

1 = IARC 1

--REGULATORY LISTS SEARCHED--

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 -- Not expected to be harmful to aquatic organisms.

MOBILITY

Components -- Expected to remain in water or migrate through soil.

PERSISTENCE AND DEGRADABILITY**Biodegradation:**

Components -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

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

ECOLOGICAL DATA

Component	Acute Aquatic Toxicity
CARBAMIC ACID, BUTYL-, 3-iodo-2-propynyl ester	L(E)C50 >0.1 - 1 mg/L

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.

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

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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 : Not Regulated for Land Transport

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

AIR (IATA): Not Regulated for Air Transport

SECTION 15

REGULATORY INFORMATION

Material is hazardous as defined by the EU Dangerous Substances/Preparations Directives.

CLASSIFICATION: Irritant.

EU LABELING:

Symbol: Xi



Irritant.

Nature of Special Risk: R36/38; Irritating to eyes and skin.

Safety Advice: S24/25; Avoid contact with skin and eyes. S26; In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37; Wear suitable protective clothing and gloves. S60; This material and its container must be disposed of as hazardous waste.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

Complies with the following national/regional chemical inventory requirements: AICS, DSL, EINECS, IECSC, KECI, TSCA

SECTION 16

OTHER INFORMATION

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

KEY TO THE RISK CODES CONTAINED IN SECTION 2 AND 3 OF THIS DOCUMENT (for information only):

R20; Harmful by inhalation.

R22; Harmful if swallowed.

R36; Irritating to eyes.

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R38; Irritating to skin.

R41; Risk of serious damage to eyes.

R50; Very toxic to aquatic organisms.

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS: Revision Changes:

Section 09: Phys/Chem Properties Note was modified.

Section 09: Boiling Point °C(°F) was modified.

Section 08: Comply with applicable regulations phrase was modified.

Section 09: Vapour Pressure was modified.

Section 01: Company Mailing Address was modified.

Section 01: Company Mailing Address was modified.

Section 01: Company Mailing Address was modified.

Section 09: Relative Density - Header was modified.

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

Section 09: Viscosity was modified.

Section 15: National Chemical Inventory Listing was modified.

Section 08: Exposure limits/standards was modified.

Section 01: Company Contact Methods Sorted by Priority was modified.

Section 08: Exposure Limit Values - Header was added.

Section 08: OEL Table - Form Column - Header was added.

Section 08: OEL Table - Limit Column - Header was added.

Section 08: OEL Table - Notation Column - Header was added.

Section 08: OEL Table - Source Column - Header was added.

Section 08: OEL Table - Substance Name Column - Header was added.

Section 08: Exposure Limits Table was added.

Section 08: Exposure Limit Values - Header was added.

Section 08: OEL Table - Substance Name Column - Header was deleted.

Section 08: OEL Table - Limit Column - Header was deleted.

Section 08: OEL Table - Notation Column - Header was deleted.

Section 08: Exposure Limit Values - Header was deleted.

Section 08: Exposure Limit Values - Table Header was deleted.

Section 08: OEL Table - Source Column - Header was deleted.

Section 08: OEL Table - Year Column - Header was deleted.

Section 08: Exposure Limits Table was deleted.

Section 08: OEL Table - Form Column - Header was deleted.

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