Mastercool Inc. "World Class Quality"

SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: **Ester 100 Oil**

Product Description: Synthetic Base Stocks and Additives

Intended Use: Lubricant, Compressor Lubricant , Refrigeration Lubricant, Automotive Compressor lubricant

COMPANY IDENTIFICATION

Supplier

Mastercool Inc.
1 Aspen Dr.
Randolph, NJ 07869 USA
+1-973-252-9119

Emergency telephone numbers USA – Chemtrec: 800-424-9300 All Others – Chemtrec: +1-703-527-3887

SECTION 2: HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH HAZARDS

Hazard Classification: Not hazardous.

Label Elements Including Precautionary Statements
Symbol: None.
Signal Word: None.
Hazard Risk Statement: Not hazardous.
Precautionary Statement: Avoid contact with skin and eyes.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
IF ON SKIN: Wash with plenty of soap and water.

Other Hazard: None known.

Note : *This information is based on test data from similar products.*
Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage. Not likely to be absorbed through skin. Injection may cause Diarrhea, Aspiration hazard if swallowed - can enter lungs and cause damage

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: COMPONENT INFORMATION

Chemical Name	CAS #	EINECs/ELINKs #	Percent (% wt)	Symbols /Risk Phrases
Polyol Ester made with straight and branched fatty acids	Proprietary		>97%	None Required
Proprietary additives			<2%	None Required
Reportable Hazardous Substance(s) or Complex Substance(s)				
None				

Explanation of symbols:

INGREDIENT COMMENTS Contains no Hazardous Ingredients (2001/58/EC)
If no EU or no CAS numbers are given for classified components the raw material supplier has applied for / will apply for exemption, have not sent the complete information yet , or there could be no obligation to give the EU or CAS numbers.

SECTION 4 : FIRST AID MEASURES	
Inhalation:	Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.
Skin:	Wash with soap and water. Remove and launder contaminated clothing before reuse. If irritation develops get medical attention.
Eye :	Flush thoroughly with water. If irritation occurs, get medical assistance.
Ingestion:	First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 : FIRE FIGHTING PROCEDURES	
EXTINGUISHING MEDIA	Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames. Inappropriate Extinguishing Media: Straight streams of water
FIRE FIGHTING	Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel. Hazardous Combustion Products: Smoke, Fume, Carbon Monoxide, Aldehydes,
FLAMMABILITY PROPERTIES	**Flash Point ASTM D92 (open cup typical) °C (°F)** >230 (446) Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D Autoignition Temperature: N/D

SECTION 6 : SPILL OR LEAK HANDLING PROCEDURES	
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. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants. Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.
ENVIRONMENTAL PRECAUTIONS	Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 : HANDLING AND STORAGE	
HANDLING	Prevent small spills and leakage to avoid slip hazard. Static Accumulator: This material is a static accumulator.
STORAGE	Do not store in open or unlabeled containers.

SECTION 8 : EXPOSURE CONTROLS / PERSONAL PROTECTION	
Exposure limits/standards for materials that can be formed when handling this product: When mists / aerosols can occur, the following are recommended: 5 mg/m³ - ACGIH TLV, 10 mg/m³ - ACGIH STEL. Note: Information about recommended monitoring procedures can be obtained from the relevant agency(ies)/institute(s)	
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:	Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include: No special requirements under ordinary conditions of use and with adequate ventilation. 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/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.
Hand Protection:	Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include: No protection is ordinarily required under normal conditions of use.
Eye Protection:	If contact is likely, safety glasses with side shields are recommended.
Skin and Body Protection:	Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include: No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.
Specific Hygiene Measures	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
ENVIRONMENTAL CONTROLS	See Sections 6, 7, 12, 13.

SECTION 9 : PHYSICAL & CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

General Information		**HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION**	
Physical State	Liquid	Density at 20°C	0.96 – 0.992
Color	Clear colorless to pale yellow	Flash Point typical °C (°F)	>230 (446) See Section 5
Odor	Characteristic	Flammable Limits	LEL: N/D UEL: N/D
Odor Threshold	ND	Autoignition Temperature:	ND
		Boiling Point °C (°F)	>200 ºC
OTHER INFORMATION		Vapor Density (Air=1)	NA
Pour Point °C (°F)	-27 (-17) or below	Vapor Pressure	< 0.013 kPa (0.1 mm Hg) at 20°C
Freezing Point	ND	Evaporation Rate (N-Butyl Acetate = 1):	ND
Viscosity at 40ºC is approximately equal to ISO VG cSt ± 10%		Solubility in Water	Nil
		pH	NA
		Oxidizing Properties	See Sections 3, 15, 16.

AUTO 68	63
AUTO 100	95

SECTION 10 : STABILITY & REACTIVITY

STABILITY:	Material is stable under normal conditions.
CONDITIONS TO AVOID:	Excessive heat. High energy sources of ignition.
MATERIALS TO AVOID:	Strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:	Material does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION:	Will not occur.

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Potential acute health effects

Inhalation : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.
Skin contact : No known significant effecs or critical hazards.
Eye contact : No known significant effects or critical hazards.

Based on Similar Materials

Route of Exposure	Conclusion / Remarks
INHALATION	
Toxicity: LC50 >5000 mg/m3 (4hour/hours)	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
INGESTION	
Toxicity: LD50 > 2000 mg/kg (rat)	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity: LD50 > 2000 mg/kg (rabbit)	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
Eye	
Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

CHRONIC/OTHER EFFECTS

For the product itself:

Repeated and/or prolonged exposure may cause irritation to the skin, eyes, or respiratory tract.

Contains:

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

CARCINOGENIC EFFECTS:

Contains no carcinogens. Similar compounds essentially non-toxic. No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or the International Agency for Research on Cancer (IARC). No component of this product present at levels greater than 0.1% is identified as a carcinogen by the U.S. National Toxicology Program (NTP) or the U.S. Occupational Safety and Health Act (OSHA), NTP or IARC.

MUTAGENIC EFFECTS: No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a mutagen.

TERATOGENIC EFFECTS/DEVELOPMENTAL TOXICITY: No component of this product at levels greater than 0.1% is classified by established regulatory criteria as teratogenic or embryotoxic.

REPRODUCTION TOXICITY: No component of this product at levels greater than 0.1% is classified by established regulatory criteria as a reproductive toxin.

Additional information is available by request.

OVER – EXPOSURE SIGNS/SYMPTOMS

Skin No known significant effects or critical hazards.
Ingestion No known significant effects or critical hazards.
Inhalation No known significant effects or critical hazards.

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

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

BIODEGRADATION

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

The potential for bioaccumulation seems negligible base on data from other similar material and the biodegradability, it is unlikely to breakdown or remain in the air, but rather become adsorbed to the soil and sediments and thus not be available to biota

ECOLOGICAL DATA

Care should be taken to minimize release of this product into the environment

Environmental Fate & Distribution	Essentially insoluble in water	**Other Typical (not a specification)**	
Persistence & Degradation Toxicity	Inherent Biodegradability	Acute Toxicity to Fish:	LL50: >5 g/L
Effect on Effluent Treatment	Product is partially removed in biological treatment processes.	Effect Concentration on Algae:	ND
		Ready Biodegradability:	ND

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.

REGULATORY DISPOSAL INFORMATION

European Waste Code: 13 01 11
USA: Discarded product is not a hazardous waste under RCRA, 40 CFR 261.

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 Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.

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 PRESSURIZE, 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) : Not Regulated for Land Transport
INLAND WATERWAYS (ADNR) : Not Regulated for Inland Waterways Transport
SEA (IMDG) : Not Regulated for Sea Transport according to IMDG-Code
AIR (IATA) : Not Regulated for Air Transport

US DOT Classification: Not Regulated Marine Pollutant: Not a Pollutant Special Provisions for transport: None Identified	**ICAO/IATA Classification** Proper shipping name: Not regulated IATA Class UN number: Not regulated. Packing Group: Not regulated.
ADR/RID Classification UN number: Not regulated. Proper shipping name: Not regulated. ADR/RID Class: Not regulated. Packing Group: Not regulated.	**IMO/IMDG Classification** Proper shipping name: Not regulated IMDG Class: Not regulated UN number: Not regulated. Packing Group: Not regulated. Marine Pollutant: Not pollutant.

USA: No special warning labels are required under OSHA 29CFR 1910.1200. OSHA hazard warnings are not applicable for this product; therefore no OSHA Warnings would appear on the label. No EPA hazard classification code.

SECTION 15: Regulatory Information Product Component Ingredients

Europe

Material is not dangerous as defined by the EU Dangerous Substances/Preparations Directives.

EU LABELING: Not regulated according to EC Directives Material is not dangerous as defined by the EU Dangerous Substances/Preparations Directives.

Classification and labeling have been performed according to EU Directives 67/548/EEC, 1999/45/EC and 2001/58/EC (including amendments) and the intended use.
- Consumer applications.

United States

EPA SARA Title III Chemical Listings

Section 302 Extremely Hazardous Substances: None.
Section 304 CERCLA Hazardous Substances: None.

Canada

WHMIS (Canadian Workplace Hazardous Materials Information System)
This product when tested as a whole is not a controlled substance within the meaning of the Hazardous Products Act.

NATIONAL LEGISLATION / REGULATIONS

Ozone depleting chemicals: No ozone depleting chemicals are present or used in manufacture.

REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

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

Special Cases:

Inventory	Status
ELINCS	Restrictions Apply
IECSC	Restrictions Apply

Germany: Water Hazardous Class (WGK): 1 (low hazard to water)

Detail **U.S. Regulations**	US INVENTORY (TSCA 8b): Listed on inventory. SARA Title III Section 302 Extremely Hazardous Substances (40 CFR Part 355):: This product is not regulated under Section 302 of SARA and 40 CFR Part 355. SARA Title III Sections 311/312 Hazardous Categorization (40 CFR Part 370):: Defined as non-hazardous by OSHA under 29 CFR 1910.1200(d). SARA 313 toxic chemical notification and release reporting: No products were found. CERCLA Sections 102a/103 Hazardous Substances (40 CFR Part 302.4):: This material is not regulated under CERCLA Sections 103 and 107.

State Regulations	No ingredient present on state lists from CA, PA, MN, MA, FL, or NJ. California prop. 65: No products were found

SECTION 16: OTHER INFORMATION

This product safety data sheet was prepared in compliance Conforms to HazCom 2012/United States. Certain elements refer to Commission Directive 2001/58/EC , 91/155/EEC, 67/548/EEC and 1999/45/EC for reference, as well as their relevant amendments, on the approximation of laws, regulations and administrative provisions relative to the classification, packaging and labeling of dangerous substances and preparations.

History
17 September 2011 – update toward GHS format
21 –March 2014 - moved NFPA and HMIS to section 16 for GHS update in format
Date of issue: 26 March 2015

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United Nations
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):
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Hazardous Material Information System and National Fire Protection Association (U.S.A.)

Degree of Hazard	NFPA		HMIS		HAZARD RATINGS	
Health	0		0		0	Insignificant
Fire	1		1		1	Slight
Reactivity	0		0		2	Moderate
Personal Protection			B		3	High
					4	Severe