



## Eastman(TM) Turbo Oil 2389

Version	Revision Date:	SDS Number:	Date of last issue: 02/19/2019
1.2	12/11/2019	150000097796	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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- Consult a physician if necessary.
- In case of skin contact : Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before reuse. If symptoms persist, call a physician.
- In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if symptoms occur.
- If swallowed : Rinse mouth. Call a physician or poison control center immediately. Do NOT induce vomiting. Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Prolonged skin contact may defat the skin and produce dermatitis. Contact with hot product will cause thermal burns. Inhalation of thermal decomposition products may lead to adverse effects including pulmonary edema.
- Notes to physician : Treat symptomatically.
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**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Foam  
Dry powder  
Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.
- Hazardous combustion products : Carbon monoxide  
Carbon dioxide (CO<sub>2</sub>)  
Oxides of phosphorus
- Further information : In case of fire and/or explosion do not breathe fumes. Use water spray to cool unopened containers. Prevent fire extinguishing water from contaminating surface water or the ground water system.
- Special protective equipment for fire-fighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.
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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Ventilate the area.
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Material can create slippery conditions.  
 Use personal protective equipment.  
 Local authorities should be advised if significant spillages cannot be contained.

- Environmental precautions : Avoid release to the environment.
- Methods and materials for containment and cleaning up : Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).

## SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.  
 Do not get in eyes.  
 Do not get on skin or clothing.  
 Wash thoroughly after handling.  
 Do not breathe vapors or spray mist.  
 Use only in area provided with appropriate exhaust ventilation.  
 Drain or remove substance from equipment prior to break-in or maintenance.  
 Wear appropriate personal protective equipment.
- Conditions for safe storage : Keep containers tightly closed in a cool, well-ventilated place.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Ingredients with workplace control parameters**

Contains no substances with occupational exposure limit values.

- Engineering measures** : Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Personal protective equipment**

Respiratory protection : Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines.

Hand protection

- Material : Recommended gloves:

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Material	:	Nitrile rubber
Remarks	:	Wear suitable gloves. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions.
Eye protection	:	Wear safety glasses with side shields (or goggles).
Protective measures	:	Ensure that eye flushing systems and safety showers are located close to the working place.

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	liquid
Color	:	amber
Odor	:	No data available
Odor Threshold	:	not determined
pH	:	not determined
Melting point/freezing point	:	-65 °F / -54 °C
Boiling point/boiling range	:	not determined
Flash point	:	410 °F / 210 °C
		Method: Cleveland open cup
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not applicable
Upper explosion limit / Upper flammability limit	:	not determined
Lower explosion limit / Lower flammability limit	:	not determined
Vapor pressure	:	not determined
Relative vapor density	:	not determined
Relative density	:	0.95 (60.1 °F / 15.6 °C)

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Density	:	950 kg/m <sup>3</sup> (60.1 °F / 15.6 °C)
Solubility(ies)	:	
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	not determined
Decomposition temperature	:	not determined
Viscosity	:	
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	11.5 mm <sup>2</sup> /s (104 °F / 40 °C) 3 mm <sup>2</sup> /s (212 °F / 100 °C)
Explosive properties	:	Not classified
Oxidizing properties	:	Not classified

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**SECTION 10. STABILITY AND REACTIVITY**

Reactivity	:	None reasonably foreseeable.
Chemical stability	:	Stable under normal conditions.
Conditions to avoid	:	Keep away from sources of ignition - No smoking.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Emits acrid smoke and fumes when heated to decomposition.

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**SECTION 11. TOXICOLOGICAL INFORMATION**
**Acute toxicity**

Not classified based on available information.

**Product:**

Acute oral toxicity	:	LD50 Oral (Rat): > 10,000 mg/kg Assessment: Not classified
Acute inhalation toxicity	:	Acute toxicity estimate (Expert judgment): Exposure time: 4 h Assessment: The substance or mixture has no acute inhalation toxicity Remarks: Read-across from a similar material

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Acute dermal toxicity : LD50 Dermal (Rabbit): > 3,160 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Components:****Tricresyl phosphate:**

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg

Acute inhalation toxicity : LC50 (Rat): > 5.2 mg/l  
Exposure time: 4 h

Acute dermal toxicity : LD50 Dermal (Rabbit): > 10,000 mg/kg

**N-phenyl-1-naphthylenamine:**

Acute oral toxicity : LD50 Oral (Rat): 1,250 mg/kg

Acute dermal toxicity : LD50 Dermal (Rabbit): > 2,000 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Species : Rabbit  
Exposure time : 24 h  
Assessment : Based on available data, the classification criteria are not met.  
Result : slight

**Components:****Tricresyl phosphate:**

Species : Rabbit  
Exposure time : 24 h  
Assessment : Not classified as hazardous.  
Result : Non-irritating to the skin.

**N-phenyl-1-naphthylenamine:**

Species : Rabbit  
Assessment : Not classified  
Result : none

**Serious eye damage/eye irritation**

Not classified based on available information.

**Product:**

Species : Rabbit  
Result : slight  
Assessment : No eye irritation



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: Test Type: various  
 Result: Based on available data, the classification criteria are not met.  
 Remarks: Not classified

Genotoxicity in vivo : Test Type: various  
 Result: Based on available data, the classification criteria are not met.

**Carcinogenicity**

Not classified based on available information.

**IARC** No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP** No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity**

Not classified based on available information.

**Product:**

Effects on fertility

:  
 Remarks: No data available

Reproductive toxicity - Assessment : No toxicity to reproduction

**Components:****Tricresyl phosphate:**

Reproductive toxicity - Assessment : May damage the unborn child. Suspected of damaging fertility.

**STOT-single exposure**

Not classified based on available information.

**Product:**

Routes of exposure : inhalation (dust/mist/fume)  
 Assessment : The substance or mixture is not classified as specific target organ toxicant, single exposure.

**Components:****Tricresyl phosphate:**

Assessment : Based on available data, the classification criteria are not met.

**STOT-repeated exposure**

Not classified based on available information.





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- Toxicity to fish : LC50 (Fish):  
Exposure time: 96 h  
Remarks: Not classified as hazardous.  
(limit of solubility in fresh water)  
Read-across from a similar material
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)):  
Exposure time: 48 h  
Remarks: Not classified as hazardous.  
(limit of solubility in fresh water)  
Read-across from a similar material
- Toxicity to algae/aquatic plants : NOEC (Pseudokirchneriella subcapitata (algae)):  
Exposure time: 72 h  
Remarks: No toxicity at the limit of solubility.  
(limit of solubility in fresh water)  
Read-across from a similar material
- Toxicity to fish (Chronic toxicity) : NOEC (Fish):  
Remarks: No toxicity at the limit of solubility.  
(limit of solubility in fresh water)  
Read-across from a similar material
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC:  
Remarks: No toxicity at the limit of solubility.  
(limit of solubility in fresh water)  
Read-across from a similar material

**Components:****Tricresyl phosphate:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.6 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.146 mg/l  
Exposure time: 48 h
- M-Factor (Acute aquatic toxicity) : 1

**N-phenyl-1-naphthylamine:**

- Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.44 mg/l  
Exposure time: 96 h
- Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 0.30 - 0.68 mg/l  
Exposure time: 48 h
- Toxicity to microorganisms : EC50 (Bacteria): Exposure time: 3 h

**Persistence and degradability****Product:**

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## Biodegradability

: Result: Readily biodegradable.  
 Biodegradation: 92.36 %  
 Exposure time: 28 d  
 Remarks: Read-across from a similar material

Biochemical Oxygen Demand (BOD) : Remarks: No data available

Chemical Oxygen Demand (COD) : Remarks: No data available

BOD/COD : Remarks: No data available

**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: Not applicable  
 Mixture

**Components:****Tricresyl phosphate:**

## Bioaccumulation

: Bioconcentration factor (BCF): 2,000  
 Remarks: No information available.

Partition coefficient: n-octanol/water : Pow: 860,000  
 log Pow: 5.93

**Mobility in soil****Components:****Tricresyl phosphate:**

Distribution among environmental compartments : log Koc: 4.31

**Other adverse effects**

No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : Dispose of in accordance with local regulations.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA-DGR**

Not regulated as a dangerous good

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**IMDG-Code**

Not regulated as a dangerous good

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable for product as supplied.

**Domestic regulation****49 CFR**

Not regulated as a dangerous good

**SECTION 15. REGULATORY INFORMATION****EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

**SARA 304 Extremely Hazardous Substances Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

**SARA 302 Extremely Hazardous Substances Threshold Planning Quantity**

Components	CAS-No.	Component TPQ (lbs)
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**SARA 311/312 Hazards** : No SARA Hazards**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.**California Prop. 65**

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

**The ingredients of this product are reported in the following inventories:**

DSL	: On the inventory, or in compliance with the inventory
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory
TCSI	: On the inventory, or in compliance with the inventory
TSCA	: On the inventory, or in compliance with the inventory

**TSCA list**

No substances are subject to a Significant New Use Rule.

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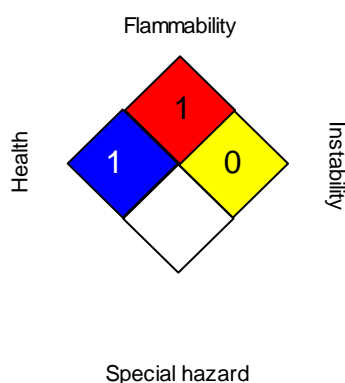
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No substances are subject to TSCA 12(b) export notification requirements.

## SECTION 16. OTHER INFORMATION

## Further information

## NFPA 704:



## HMIS® IV:

HEALTH	/	1
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "\*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

## Full text of other abbreviations

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act;

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REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Sources of key data used to : [www.EastmanAviationSolutions.com](http://www.EastmanAviationSolutions.com)  
compile the Material Safety  
Data Sheet

Revision Date : 12/11/2019

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / Z8