

Eastman(TM) Turbo Oil 2197

Version Revision Date: SDS Number: Date of last issue: 10/17/2018
1.2 08/21/2019 150000097791 Date of first issue: 09/06/2016
PRD SDSUS / Z8 / 0001

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) Turbo Oil 2197

Product code : 34358-00, P3435807, P3435809, E3435801, P3435800,
P3435801, P3435802, P3435803, P3435804, P3435805,
P3435806, P3435808

Manufacturer or supplier's details

Company name of supplier : Eastman Chemical Company

Address : 200 South Wilcox Drive
Kingsport TN 37660-5280

Telephone : (423) 229-2000

Emergency telephone : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321

Recommended use of the chemical and restrictions on use

Recommended use : Lubricant

Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Not a hazardous substance or mixture.

GHS label elements

Not a hazardous substance or mixture.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**Components**

Chemical name	CAS-No.	Concentration (% w/w)
Tricresyl phosphate	1330-78-5	1 - < 2.5

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.
If breathing is difficult, give oxygen.
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.

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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.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media : Water spray
Foam
Dry powder
Carbon dioxide (CO2)

Unsuitable extinguishing media : Do not use a solid water stream as it may scatter and spread fire.

Hazardous combustion products : Carbon monoxide
Carbon dioxide (CO2)
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.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Ventilate the area.
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.

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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:

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).

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Protective measures : Ensure that eye flushing systems and safety showers are located close to the working place.

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	:	475 °F / 246 °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	:	0.997
Solubility(ies)		
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	
		No data available
Autoignition temperature	:	not determined
Decomposition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	not determined

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Viscosity, kinematic : 26 mm²/s (104 °F / 40 °C)
5.19 mm²/s (212 °F / 100 °C)

Explosive properties : No data available

Oxidizing properties : No data available

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.

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Product:

Acute oral toxicity : Acute toxicity estimate (Rat): > 5,000 mg/kg
Assessment: Not classified
Remarks: Read-across from a similar material

Acute inhalation toxicity : Acute toxicity estimate (Expert judgment): Exposure time: 4 h
Assessment: Not classified
Remarks: Read-across from a similar material

Acute dermal toxicity : Acute toxicity estimate (Expert judgment): Assessment: Not classified
Remarks: Read-across from a similar material

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

Skin corrosion/irritation

Not classified based on available information.

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Product:

Species	:	Rabbit
Assessment	:	Not classified as hazardous.
Result	:	slight

Components:**Tricresyl phosphate:**

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

Serious eye damage/eye irritation

Not classified based on available information.

Product:

Species	:	Rabbit
Result	:	slight
Assessment	:	Not classified
Remarks	:	Read-across from a similar material

Components:**Tricresyl phosphate:**

Species	:	Rabbit
Assessment	:	Not classified

Respiratory or skin sensitization**Skin sensitization**

Not classified based on available information.

Respiratory sensitization

Not classified based on available information.

Product:

Test Type	:	Skin Sensitization
Species	:	Humans
Assessment	:	Not classified
Method	:	Human Repeat Insult Patch Test
Result	:	non-sensitizing
Remarks	:	Read-across from a similar material

Components:**Tricresyl phosphate:**

Test Type	:	Skin Sensitization
Assessment	:	Not classified

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Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Test Type: various
Metabolic activation: Read-across from a similar material
Result: Based on available data, the classification criteria are not met.

Genotoxicity in vivo : Test Type: Mutagenicity
Result: Based on available data, the classification criteria are not met.
Remarks: Read-across from a similar material

Components:**Tricresyl phosphate:**

Genotoxicity in vitro : 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.

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STOT-single exposure

Not classified based on available information.

Product:

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

Components:**Tricresyl phosphate:**

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

STOT-repeated exposure

Not classified based on available information.

Product:

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

Components:**Tricresyl phosphate:**

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

Repeated dose toxicity**Product:**

Remarks : No known significant effects or critical hazards.

Components:**Tricresyl phosphate:**

Species : Rat
 : 300 mg/l

Aspiration toxicity

Not classified based on available information.

Product:

Not classified

Components:**Tricresyl phosphate:**

Not classified

Information on likely routes of exposure**Product:**

Inhalation : Remarks: None known.

Skin contact : Remarks: Prolonged skin contact may defat the skin and pro-

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duce dermatitis.

Eye contact : Remarks: Contact with the eyes may be very painful but does not cause damage.

Ingestion : Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity**Product:**

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: Not classified as hazardous.
(limit of solubility in fresh water)
Read-across from a similar material

Toxicity to fish (Chronic toxicity) : NOEC (Fish):
Remarks: Not classified as hazardous.
(limit of solubility in fresh water)
Read-across from a similar material

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC:
Remarks: Not classified as hazardous.
(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

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Persistence and degradability**Product:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 92.36 %
Exposure time: 28 d

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: Mixture
Not applicable

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**

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IATA-DGR

Not regulated as a dangerous good

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:

AICS : On the inventory, or in compliance with the inventory

AICS : On the inventory, or in compliance with the inventory

ENCS : 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 TSCA 12(b) export notification requirements.

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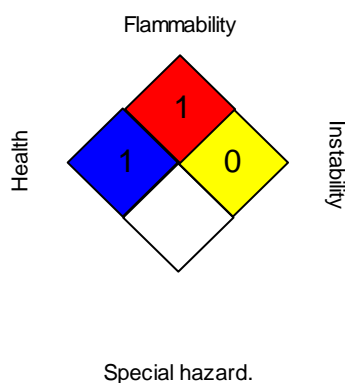
The following substance(s) is/are subject to a Significant New Use Rule:
Amines, bis(C11-14-branched and linear alkyl) 900169-60-0

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

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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; 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 compile the Material Safety Data Sheet : www.EastmanAviationSolutions.com

Revision Date : 08/21/2019

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