Eastman(TM) Turbo Oil 2380

Version	Revision Date:	SDS Number:	Date of last issue: 07/26/2016
3.3	07/29/2016	150000097793	Date of first issue: 02/28/2014

SDSUS / PRD / 0001

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) Turbo Oil 2380

Product code : E3435901

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 number : CHEMTREC: +1-800-424-9300, +1-703-527-3887 CCN7321
For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300 or call 423-229-2000.

Recommended use of the chemical and restrictions on use

Recommended use : Lubricant

Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS Classification

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

Substance / Mixture : Mixture

Components

Chemical name	CAS-No.	Concentration (% w/w)
N-Phenylbenzenamine reaction products with 2,4,4-trimethylpentene	68411-46-1	1 - 5
Tricresyl phosphate	1330-78-5	< 3
N-phenyl-1-naphthylenamine	90-30-2	< 2.5

SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.

EASTMAN

03/17/2017

PRD

For address changes/corrections or to receive this MSDS by e-mail, please contact your Eastman Customer Service Representative.

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PEVELY, MO 63070
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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.
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 centre 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. FIREFIGHTING 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.

Specific hazards during fire-fighting : Hazardous combustion products
carbon dioxide, carbon monoxide
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 firefighters : 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 emer- : Ventilate the area.
Material can create slippery conditions.

gency procedures		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 vapours 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

Components 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).
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
Colour	:	amber
Odour	:	No data available
Melting point/freezing point	:	-54 °C
Flash point	:	246 °C Method: Cleveland open cup
Flammability (solid, gas)	:	Not applicable
Relative density	:	0.98 (15.6 °C)
Density	:	980 kg/m3 (15.6 °C)
Solubility(ies) Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	Not applicable Mixture
Viscosity Viscosity, kinematic	:	23 - 30 mm2/s (40 °C) 4.9 - 5.4 mm2/s (100 °C)

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	:	LD50 Oral (Rat): > 5,000 mg/kg Assessment: Not classified
Acute inhalation toxicity	:	Acute toxicity estimate (Expert judgement): Exposure time: 4 h Assessment: Not classified Remarks: Read-across from a similar material
Acute dermal toxicity	:	Acute toxicity estimate (Expert judgement): Assessment: Not classified Remarks: Read-across from a similar material

Components:

N-Phenylbenzenamine reaction products with 2,4,4-trimethylpentene:

Acute oral toxicity	:	LD50 Oral (Rat): > 5,000 mg/kg
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 2,000 mg/kg

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: Not classified as hazardous.
Result: slight

Components:

N-Phenylbenzenamine reaction products with 2,4,4-trimethylpentene:
Species: Rabbit
Assessment: Not classified
Result: slight

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: No eye irritation
Assessment: Not classified

Components:

N-Phenylbenzenamine reaction products with 2,4,4-trimethylpentene:
Species: Rabbit
Result: slight
Assessment: Not classified

Tricresyl phosphate:
Species: Rabbit
Assessment: Not classified

N-phenyl-1-naphthylenamine:
Species: Rabbit
Result: slight
Assessment: Not classified

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Product:

Test Type: Skin Sensitization
Assessment: Not classified
Method: Human Repeat Insult Patch Test
Result: non-sensitizing

Components:

Tricresyl phosphate:
Test Type: Skin Sensitization
Assessment: Not classified

N-phenyl-1-naphthylenamine:
Assessment: Skin sensitisation

Result: sensitizing

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro	:	Test Type: Mutagenicity 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 component 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 identified as a carcinogen or potential carcinogen by OSHA.
NTP	No component 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	:	Species: Rat Remarks: No known significant effects or critical hazards.
Effects on foetal development	:	Species: Rat Remarks: No known significant effects or critical hazards.

Reproductive toxicity - Assessment	:	No toxicity to reproduction

Components:

Tricresyl phosphate:

Effects on fertility	:	Species: Rat Remarks: Suspected of damaging fertility.
Effects on foetal development	:	Species: Rat Remarks: Suspected of damaging the unborn child.
Reproductive toxicity - Assessment	:	May damage the unborn child. Suspected of damaging fertility.

STOT - single exposure

Not classified based on available information.

Product:

Exposure routes: inhalation (dust/mist/fume)
Assessment: Not classified

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:

N-Phenylbenzenamine reaction products with 2,4,4-trimethylpentene:
Assessment: Not classified

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

N-phenyl-1-naphthylenamine:
Assessment: Not classified

Repeated dose toxicity

Product:

Remarks: No known significant effects or critical hazards.

Components:

Tricresyl phosphate:
Species: Rat
NOEL: 300 mg/l

Aspiration toxicity

Not classified based on available information.

Product:

Not classified

Components:

Tricresyl phosphate:
Not classified

Experience with human exposure

Product:

Inhalation	:	Remarks: None known.
Skin contact	:	Remarks: Prolonged skin contact may defat the skin and produce 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): Remarks: Not classified as hazardous. (limit of solubility in fresh water) Read-across from a similar material
Toxicity to daphnia and other aquatic invertebrates	:	NOEC:: Remarks: Not classified as hazardous. (limit of solubility in fresh water) Read-across from a similar material
Toxicity to algae	:	NOEC (Pseudokirchneriella subcapitata (algae)): 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

N-phenyl-1-naphthylenamine:

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 bacteria : EC50 (Bacteria): Exposure time: 3 h

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 Regulation

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.

National Regulations

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

SARA 311/312 Hazards : No SARA Hazards

The components of this product are reported in the following inventories:

TSCA : On TSCA Inventory

DSL : All components of this product are on the Canadian DSL

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
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory

TSCA list

No substances are subject to a Significant New Use Rule.

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

SECTION 16. OTHER INFORMATION

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; 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

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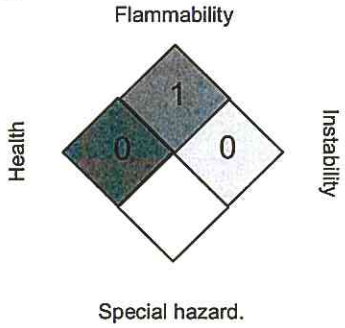
Further information

NFPA:



HMIS III:

HEALTH	0
FLAMMABILITY	1
PHYSICAL HAZARD	0

0 = not significant, 1 =Slight,
2 = Moderate, 3 = High
4 = Extreme, * = Chronic

Sources of key data used to compile the Safety Data Sheet	:	www.EastmanAviationSolutions.com
Revision Date	:	07/29/2016

The information provided in this 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.

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