

Material Safety Data Sheet

Revision date 09-Sep-2013

Version 6

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name MCS®-2361

Product code 80010

Recommended Use Hydraulic fluids and additives

Manufacturer Solutia Inc.
A subsidiary of Eastman Chemical Company
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St. Louis, Missouri 63141 U.S.A.
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SECTION 2: Hazards identification**Signal word - Warning****EMERGENCY OVERVIEW**

Causes skin irritation

Elevated processing temperatures may cause release of toxic vapors which are harmful if inhaled

Appearance Oily**Physical State** Liquid**Odor** Odorless**Potential health effects****Acute toxicity****Eyes**

No more than slightly irritating.

Skin

Highly irritating to skin. No more than slightly toxic.

Inhalation

Elevated processing temperatures may cause release of toxic vapors which are harmful if inhaled.

Ingestion

Not expected to produce significant adverse health effects when recommended use instructions are followed.

Chronic effects

Produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies.

Environmental Hazard

See Section 12: ECOLOGICAL INFORMATION.

SECTION 3: Composition/information on ingredients

Chemical name	CAS-No	Weight %
2-ETHYLHEXYL DIPHENYL PHOSPHATE	1241-94-7	>90
BIS(2-ETHYLHEXYL) PHENYL PHOSPHATE	16368-97-1	<5
Triphenyl phosphate	115-86-6	<5

SECTION 4: First aid measures

General advice	When symptoms persist or in all cases of doubt seek medical advice. If unconscious, place in recovery position and get medical attention immediately. Show this material safety data sheet to the doctor in attendance.
Eye contact	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Get medical attention immediately if symptoms occur.
Skin contact	Wash off immediately with soap and plenty of water. Remove contaminated clothing and shoes. In the case of skin irritation or allergic reactions see a physician. Wash contaminated clothing before reuse. Discard contaminated shoes.
Inhalation	Remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. Call a physician. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. Maintain an open airway. If unconscious, place in recovery position and get medical attention immediately. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for at least 48 hours, due to the delayed appearance of poisoning.
Ingestion	If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Keep victim warm and quiet. Loosen tight clothing such as a collar, tie, belt or waistband. Never give anything by mouth to an unconscious person. Do NOT induce vomiting unless directed to do so by a physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Maintain an open airway. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
Notes to physician	Treat symptomatically. Persons who have inhaled vapors or smoke fumes have to be put under medical observation for at least 48 hours, due to the delayed appearance of poisoning.

SECTION 5: Firefighting measures

Flash point	223 °C
Method	Cleveland Open Cup
Suitable extinguishing media	Water spray, Foam, Dry powder, Carbon dioxide (CO ₂)
Explosion Data	
Sensitivity to Mechanical Impact	None
Sensitivity to static discharge	None
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: Accidental release measures

Personal precautions	No action shall be taken involving any personal risk or without suitable training. Large Spill: Approach release from upwind. Do not touch or walk through spilled material. Avoid contact with skin, eyes and clothing. Avoid breathing vapors or mists. Wear personal protective equipment. See also section 8.
Environmental precautions	Prevent further leakage or spillage if safe to do so. Clean up spill immediately. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Methods for containment	Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.
Methods for cleaning up	Take up with sand or other noncombustible absorbent material and place into containers for later disposal. Clean contaminated surface thoroughly.

SECTION 7: Handling and storage

Advice on safe handling	Avoid contact with skin, eyes and clothing. Do not breathe vapors or spray mist. Use in well ventilated areas. Wear personal protective equipment. Do not eat, drink or smoke when using this product. Handle in accordance with good industrial hygiene and safety practice.
Technical measures/Storage conditions	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight. Keep away from contact with oxidizing materials. Keep in properly labeled containers. Use appropriate containment to avoid environmental contamination. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Store in accordance with local regulations. Keep away from food, drink and animal feeding stuffs.

SECTION 8: Exposure controls/personal protection

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Triphenyl phosphate	TWA: 3 mg/m ³	TWA: 3 mg/m ³	IDLH: 1000 mg/m ³ TWA: 3 mg/m ³

Engineering measures	Good general ventilation should be sufficient to control worker exposure to airborne contaminants. Apply technical measures to comply with the occupational exposure limits. If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
Personal protective equipment	
Eye/face protection	Goggles
Skin and body protection	Wear protective gloves and additional protective clothing as necessary to prevent exposures.
Respiratory protection	If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.
Hygiene measures	Handle in accordance with good industrial hygiene and safety practice.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical State	Liquid	
Appearance	Oily	
Odor	Odorless	
Color	No information available	
Odor threshold	No information available	
Property	Values	Remarks • Methods
pH	No information available	
Melting point/freezing point	No information available	
Boiling point/boiling range	375 °C	1013 hPa
Flash point	223 °C	Cleveland Open Cup
Evaporation Rate	No information available	
Specific gravity	1.085 - 1.095	25 °C

Flammability (solid, gas)	
Flammability Limits in Air	
Upper flammability limit	No information available
Lower flammability limit	No information available
Vapor pressure	No information available

Vapor density	>1	(Air = 1.0)
Water solubility	Negligible	
Solubility in other solvents	No information available	
Partition coefficient: n-octanol/water	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Viscosity, kinematic	No information available	
Viscosity, dynamic	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Density	1.085 - 1.095 g/cm ³	25 °C
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SECTION 10: Stability and reactivity

Stability	Stable under recommended storage and handling conditions (see section 7).
Incompatible products	Strong oxidizing agents.
Conditions to avoid	Avoid elevated temperatures for prolonged periods of time
Hazardous decomposition products	Phosphorous oxides.
Hazardous polymerization	Hazardous polymerization does not occur.

SECTION 11: Toxicological information

Acute toxicity

Product Information

LD50 oral:	> 15,800 mg/kg (rat)
LD50 dermal:	> 7,940 mg/kg (rabbit)
LC50 Inhalation:	> 4.8 mg/l (rat) . 3 mg/l (mouse)

Inhalation	Elevated processing temperatures may cause release of toxic vapors which are harmful if inhaled.
Eyes	No more than slightly irritating.
Skin	Highly irritating to skin. No more than slightly toxic.
Ingestion	Not expected to produce significant adverse health effects when recommended use instructions are followed.

Chronic Toxicity

Chronic Toxicity	Produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies.
Carcinogenicity	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
Germ cell mutagenicity	No genetic effects were observed in standard tests using bacterial and animal cells.
Developmental Toxicity	No effects on offspring observed in laboratory animals in the presence of maternal toxicity.

SECTION 12: Ecological information**Acute aquatic toxicity***Product Information*

<u>Property</u>	<u>Result</u>	<u>Species</u>
96-hour LC50 - Fish	No data available	No information available
48-hour EC50 - Aquatic invertebrates	No data available	No information available
72-hour EC50 - Algae/aquatic plants	No data available	No information available

Component Information

Chemical name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
2-ETHYLHEXYL DIPHENYL PHOSPHATE	0.2: 72 h Pseudokirchneriella subcapitata mg/L EC50	0.38: 96 h Lepomis macrochirus mg/L LC50 static 0.38: 96 h Oncorhynchus mykiss mg/L LC50 static 0.38: 96 h Pimephales promelas mg/L LC50 static	0.15 mg/l
Triphenyl phosphate	2 mg/l	0.31 mg/l	1 mg/l

Ecotoxicity

Chemical name	log Pow
2-ETHYLHEXYL DIPHENYL PHOSPHATE	5.73
Triphenyl phosphate	4.63

SECTION 13: Disposal considerations

Waste disposal methods	This material when discarded may be a hazardous waste as that term is defined by the Resource Conservation and Recovery Act (RCRA), 40 CFR 261.24, due to its toxicity characteristic. This material should be analyzed in accordance with Method 1311 for the compound D018 BENZENE. Consult 40 CFR 268.40 or appropriate local regulations for concentration based standards.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

Other information

This product meets the criteria for synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40 CFR 279). Those standards govern recycling and disposal in lieu of 40 CFR 260 -272 of the Federal hazardous waste program in states that have adopted these used oil regulations. Consult your attorney or appropriate regulatory official to be sure these standards have been adopted in your state. Recycle or burn in accordance with the applicable standards. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.

SECTION 14: Transport information**DOT**

UN/ID no	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate)
Hazard Class	9
Packing group	III
Marine pollutant	This product contains a chemical which is listed as a marine pollutant according to DOT

Note

Applies only to packages which contain greater than 119 gallons or for shipments moving via water transportation.

IMDG

UN/ID no	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate)
Hazard Class	9
Packing group	III
EmS No.	F-A, S-F
Marine pollutant	yes

IATA

UN/ID no	UN3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (triphenyl phosphate)
Hazard Class	9
Packing group	III

TDG

See DOT

SECTION 15: Regulatory information**U.S. Federal Regulations****SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute Health Hazard	yes
Chronic Health Hazard	no
Fire Hazard	no
Sudden release of pressure hazard	no
Reactive Hazard	no

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations**California Proposition 65**

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product may contain substances regulated by state right-to-know regulations

Chemical name	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Triphenyl phosphate	X	X	X		

International Regulations

Chemical name	Carcinogen Status	Exposure Limits
Triphenyl phosphate		Mexico: TWA 3 mg/m ³ Mexico: STEL 6 mg/m ³

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class

D2B Toxic materials

Materials causing other toxic effects

International Inventories

TSCA (US)	Complies
DSL/NDSL (Canada)	Complies
EINECS/ELINCS (EU)	-
ENCS (Japan)	-
IECSC (China)	-
KECL (Korea)	-
PICCS (Philippines)	-
AICS (Australia)	-

SECTION 16: Other information

NFPA
HMIS

Health hazard 1
Health hazard 1

Flammability 1
Flammability 1

Stability 0
Physical hazard 0

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Disclaimer

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.

End of Material Safety Data Sheet