

# 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  
575 Maryville Centre Drive  
St. Louis, Missouri 63141 U.S.A.  
Telephone: +1-314-674-6661

**Emergency Phone Number** Chemtrec: 1-800-424-9300 - Direct Dial:1-703-527-3887

**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**

<b>General advice</b>	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.
<b>Eye contact</b>	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.
<b>Skin contact</b>	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.
<b>Inhalation</b>	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.
<b>Ingestion</b>	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.
<b>Notes to physician</b>	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

<b>Flash point</b>	223 °C
<b>Method</b>	Cleveland Open Cup
<b>Suitable extinguishing media</b>	Water spray, Foam, Dry powder, Carbon dioxide (CO <sub>2</sub> )
<b>Explosion Data</b>	
<b>Sensitivity to Mechanical Impact</b>	None
<b>Sensitivity to static discharge</b>	None
<b>Protective equipment and precautions for firefighters</b>	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

<b>Personal precautions</b>	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.
<b>Environmental precautions</b>	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.
<b>Methods for containment</b>	Prevent further leakage or spillage if safe to do so. Dike to collect large liquid spills.
<b>Methods for cleaning up</b>	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

<b>Advice on safe handling</b>	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.
<b>Technical measures/Storage conditions</b>	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 <sup>3</sup>	TWA: 3 mg/m <sup>3</sup>	IDLH: 1000 mg/m <sup>3</sup> TWA: 3 mg/m <sup>3</sup>

<b>Engineering measures</b>	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.
<b>Personal protective equipment</b>	
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.
<b>Hygiene measures</b>	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

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

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

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

## 9.2 Other information

<b>Density</b>	1.085 - 1.095 g/cm <sup>3</sup>	25 °C
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## SECTION 10: Stability and reactivity

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

## SECTION 11: Toxicological information

### Acute toxicity

#### Product Information

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

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

**Chronic Toxicity**

<b>Chronic Toxicity</b>	Produced effects on body weight, serum enzymes and/or organ weights in repeat dose studies.
<b>Carcinogenicity</b>	This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.
<b>Germ cell mutagenicity</b>	No genetic effects were observed in standard tests using bacterial and animal cells.
<b>Developmental Toxicity</b>	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>
<b>96-hour LC50 - Fish</b>	No data available	No information available
<b>48-hour EC50 - Aquatic invertebrates</b>	No data available	No information available
<b>72-hour EC50 - Algae/aquatic plants</b>	No data available	No information available

*Component Information*

<b>Chemical name</b>	<b>Toxicity to algae</b>	<b>Toxicity to fish</b>	<b>Toxicity to daphnia and other aquatic invertebrates</b>
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**

<b>Chemical name</b>	<b>log Pow</b>
2-ETHYLHEXYL DIPHENYL PHOSPHATE	5.73
Triphenyl phosphate	4.63

**SECTION 13: Disposal considerations**

<b>Waste disposal methods</b>	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.
<b>Contaminated packaging</b>	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**

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

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

**IATA**

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

<b>Acute Health Hazard</b>	yes
<b>Chronic Health Hazard</b>	no
<b>Fire Hazard</b>	no
<b>Sudden release of pressure hazard</b>	no
<b>Reactive Hazard</b>	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 <sup>3</sup> Mexico: STEL 6 mg/m <sup>3</sup>

**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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**Date of the previous version:** Not available

**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**