

## MCS®-2361

Version	Revision Date:	SDS Number:	Date of last issue: -
2.0	01/02/2018	150000093421	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	

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## SECTION 1. IDENTIFICATION

Product name : MCS®-2361

Product code : 34114-00, P3411402, P3411400, P3411401

**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 : Hydraulic fluids

Restrictions on use : None known.


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## SECTION 2. HAZARDS IDENTIFICATION

**GHS classification in accordance with 29 CFR 1910.1200**

Reproductive toxicity : Category 2

**GHS label elements**

Hazard pictograms : 

Signal Word : Warning

Hazard Statements : H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

Precautionary Statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

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**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

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

Chemical name	CAS-No.	Concentration (% w/w)
2-ethylhexyl diphenyl phosphate	1241-94-7	> 90
Phosphoric acid, bis(2-ethylhexyl) phenyl ester	16368-97-1	< 5
triphenylphosphate	115-86-6	< 5
long-chain alkenyl amide	68478-81-9	< 0.5

**SECTION 4. FIRST AID MEASURES**

- General advice : Get medical attention if symptoms occur.  
Show this safety data sheet to the doctor in attendance.  
If breathing is difficult, give oxygen.  
If not breathing, give artificial respiration.  
Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.
- If inhaled : Move to fresh air.  
Call a physician or poison control center immediately.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Take off all contaminated clothing immediately.  
Call a physician or poison control center immediately.
- In case of eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- If swallowed : If accidentally swallowed obtain immediate medical attention.
- Most important symptoms and effects, both acute and delayed : Persons who have inhaled vapours or smoke fumes have to be put under medical observation for at least 48 hours, due to the delayed appearance of poisoning.  
Suspected of damaging fertility. Suspected of damaging the unborn child.
- Notes to physician : Treat symptomatically.

**SECTION 5. FIRE-FIGHTING MEASURES**

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Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Dry chemical  
Water spray

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

Specific hazards during fire fighting : None known.

Further information : None known.

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 : 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 : Sweep up or vacuum up spillage and collect in suitable container for disposal.  
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 protection against fire and explosion : None known.

Advice on safe handling : Do not breathe vapors or spray mist.  
Do not get on skin or clothing.  
Do not swallow.  
Use only with adequate ventilation.  
Wash thoroughly after handling.

Conditions for safe storage : Keep tightly closed.

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Ingredients with workplace control parameters**

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
triphenylphosphate	115-86-6	TWA	3 mg/m <sup>3</sup>	ACGIH
		TWA	3 mg/m <sup>3</sup>	NIOSH REL

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		TWA	3 mg/m3	OSHA Z-1
		TWA	3 mg/m3	OSHA P0

**Hazardous components without workplace control parameters**

Ingredients	CAS-No.
long-chain alkenyl amide	68478-81-9

**Engineering measures** : Ensure adequate ventilation.

**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

Remarks : Wear suitable gloves.

Eye protection : Safety glasses

Protective measures : Remove respiratory and skin/eye protection only after vapors have been cleared from the area.  
 Ensure that eye flushing systems and safety showers are located close to the working place.  
 Use personal protective equipment as required.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : oily

Odor : odorless

Odor Threshold : not determined

pH : not determined

Melting point/range : not determined

Boiling point/boiling range : 375 °C  
(1,013 hPa)

Flash point : 223 °C  
Method: Cleveland open cup

Evaporation rate : not determined

Upper explosion limit : not determined

Lower explosion limit : not determined

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Vapor pressure	:	not determined
Relative vapor density	:	> 1
Relative density	:	1.085 - 1.095 (25 °C)
Solubility(ies)		
Water solubility	:	negligible
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	not determined
Decomposition temperature	:	Thermal stability not tested. Low stability hazard expected at normal operating temperatures.
Viscosity		
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	not determined
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.
Possibility of hazardous reactions	:	Stable
Conditions to avoid	:	None known.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide (CO <sub>2</sub> ) Carbon monoxide Oxides of phosphorus

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

Not classified based on available information.

**Product:**

Acute oral toxicity	:	LD50 Oral (Rat): > 15,800 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 4.8 mg/l

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Exposure time: 4 h

Acute dermal toxicity : LD50 Dermal (Rabbit): &gt; 7,940 mg/kg

**Ingredients:****triphenylphosphate:**

Acute oral toxicity : LD50 Oral (Rat, male): &gt; 6,400 mg/kg

Acute dermal toxicity : LD50 Dermal (Guinea pig, male): &gt; 5,000 mg/kg

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Remarks: No data available

**Ingredients:****2-ethylhexyl diphenyl phosphate:**Species: Rabbit  
Exposure time: 4 h  
Result: slight**triphenylphosphate:**Species: Guinea pig  
Remarks: Non-irritating to the skin.**Serious eye damage/eye irritation**

Not classified based on available information.

**Product:**

Remarks: No data available

**Ingredients:****2-ethylhexyl diphenyl phosphate:**Species: Rabbit  
Result: slight**triphenylphosphate:**Species: Rabbit  
Result: slight**Respiratory or skin sensitization****Skin sensitization**

Not classified based on available information.

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**Respiratory sensitization**

Not classified based on available information.

**Product:**

Remarks: No data available

**Germ cell mutagenicity**

Not classified based on available information.

**Carcinogenicity**

Not classified based on available information.

**Product:**

Remarks: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

**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**

Suspected of damaging fertility. Suspected of damaging the unborn child.

**Ingredients:****triphenylphosphate:**

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

**STOT-single exposure**

Not classified based on available information.

**Product:**

Remarks: No data available

**STOT-repeated exposure**

Not classified based on available information.

**Product:**

Remarks: No data available

**Aspiration toxicity**

Not classified based on available information.

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**Product:**

No aspiration toxicity classification

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

Inhalation : Remarks: None known.  
Skin contact : Remarks: None known.  
Eye contact : Remarks: None known.  
Ingestion : Remarks: None known.

**Further information****Product:**

Remarks: None known.

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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Ingredients:****2-ethylhexyl diphenyl phosphate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.38 mg/l  
Exposure time: 96 h  
Toxicity to algae : EC50 (Pseudokirchneriella subcapitata (algae)): 0.2 mg/l  
M-Factor (Acute aquatic toxicity) : 1  
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 0.018 mg/l  
Exposure time: 21 d

**triphenylphosphate:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 0.4 mg/l  
Exposure time: 96 h  
M-Factor (Acute aquatic toxicity) : 1

**Persistence and degradability****Ingredients:****2-ethylhexyl diphenyl phosphate:**



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Biodegradability : Result: Readily biodegradable.  
Biodegradation: 70.8 %  
Exposure time: 10 d

**triphenylphosphate:**

Biodegradability : Result: Readily biodegradable.

**Bioaccumulative potential****Ingredients:****2-ethylhexyl diphenyl phosphate:**

Partition coefficient: n-octanol/water : log Pow: 5.73

**triphenylphosphate:**

Partition coefficient: n-octanol/water : log Pow: 4.63

**Mobility in soil**

No data available

**Other adverse effects**

No data available

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

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

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.

This product meets the criteria for a 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.

Eastman Chemical Company operates a used fluid return program for certain fluids under these used oil standards. Contact your Sales Representative for details.

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

UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(triphenyl phosphate)  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
Packing instruction (cargo aircraft) : 964  
Packing instruction (passenger aircraft) : 964

**IMDG-Code**

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,  
N.O.S.  
(triphenyl phosphate)  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

**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

Remarks : Shipping in package sizes of less than 5 L (liquids) or 5 KG (solids) may lead to a non-regulated classification.

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**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**

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Reproductive toxicity

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**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.

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

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

IECSC : 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.

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

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**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

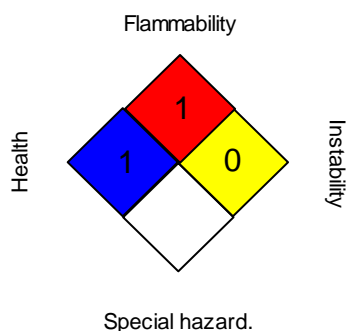
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Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

**Further information**

**NFPA:**



**HMIS® IV:**

<b>HEALTH</b>	*	<b>1</b>
<b>FLAMMABILITY</b>	<b>1</b>	
<b>PHYSICAL HAZARD</b>	<b>0</b>	

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.

Revision Date : 01/02/2018

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