

## Eastman(TM) HALO 157

Version            Revision Date:            SDS Number:            Date of last issue: 02/28/2019  
3.0                08/14/2019              150000097894        Date of first issue: 09/06/2016  
PRD                                             SDSUS / Z8 / 0001

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**SECTION 1. IDENTIFICATION**

Product name                            : Eastman(TM) HALO 157  
Product code                            : 34361-00, E3436101, P3436102, P3436101

**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.


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

Reproductive toxicity (Oral)         : Category 2

Specific target organ                   : Category 2  
systemic toxicity - repeated  
exposure

**GHS label elements**

Hazard pictograms                     : 

Signal Word                             : Warning

Hazard Statements                     : H361 Suspected of damaging fertility or the unborn child if  
    : swallowed.  
    : H373 May cause damage to organs through prolonged or  
    : repeated exposure.

Precautionary Statements            : **Prevention:**  
    : P201 Obtain special instructions before use.  
    : P202 Do not handle until all safety precautions have been read  
    : and understood.

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P260 Do not breathe dust/ fume/ gas/ mist/ vapors/ spray.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

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

**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****Components**

Chemical name	CAS-No.	Concentration (% w/w)
Phenol, isopropylated, phosphate (3:1)	68937-41-7	1 - < 3
triphenylphosphate	115-86-6	< 1
2,6-di-tert-butyl-p-cresol	128-37-0	< 1

**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 plenty of water for at least 15 minutes.  
 Get medical attention if symptoms occur.  
 Wash contaminated clothing before reuse.
- 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 : Call a physician or poison control center immediately.  
 Do not induce vomiting without medical advice.  
 Rinse mouth.  
 Never give anything by mouth to an unconscious person.
- Most important symptoms and effects, both acute and delayed : Suspected of damaging fertility or the unborn child if swallowed.  
 May cause damage to organs through prolonged or repeated exposure.

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Notes to physician : Treat symptomatically.

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**SECTION 5. FIRE-FIGHTING MEASURES**

- Suitable extinguishing media : Water spray  
Carbon dioxide (CO2)  
Dry chemical  
Foam
- 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 : Use a water spray to cool fully closed containers.  
Do not allow run-off from fire fighting to enter drains or water courses.
- Special protective equipment for fire-fighters : Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.
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**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Ventilate the area.  
Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
Avoid contact with skin and eyes.  
Material can create slippery conditions.  
Wear appropriate personal protective equipment.  
Local authorities should be advised if significant spillages cannot be contained.
- Environmental precautions : Clear up spills immediately and dispose of waste safely.  
Avoid release to the environment.  
Collect spillage.
- 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).
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**SECTION 7. HANDLING AND STORAGE**

- Advice on safe handling : Do not breathe vapors or spray mist.  
Handle product only in closed system or provide appropriate exhaust ventilation at machinery.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Wear appropriate personal protective equipment.  
Avoid contact with skin, eyes and clothing.  
Wash thoroughly after handling.
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Wash contaminated clothing before reuse.  
 Drain or remove substance from equipment prior to break-in or maintenance.  
 Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage : Store locked up.  
 Keep container tightly closed in a dry and well-ventilated place.  
 Keep in a cool place away from oxidizing agents.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

## Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
2,6-di-tert-butyl-p-cresol	128-37-0	TWA (Inhalable fraction and vapor)	2 mg/m <sup>3</sup>	ACGIH
		TWA	10 mg/m <sup>3</sup>	NIOSH REL
		TWA	10 mg/m <sup>3</sup>	OSHA P0

**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 a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary.  
 Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable.  
 If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.

Eye protection : Wear safety glasses with side shields (or goggles).

Skin and body protection : Wear suitable protective clothing.

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

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**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance	:	liquid
Color	:	amber
Odor Threshold	:	not determined
pH	:	not determined
Melting point/freezing point	:	-60 °F / -51 °C
Boiling point/boiling range	:	not determined
Flash point	:	505 °F / 263 °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	:	0.986 (59 °F / 15 °C)
Density	:	986 kg/m <sup>3</sup> (59 °F / 15 °C)
Partition coefficient: n-octanol/water	:	Not applicable
Autoignition temperature	:	not determined
Decomposition temperature	:	not determined
Viscosity		
Viscosity, dynamic	:	not determined
Viscosity, kinematic	:	52.8 mm <sup>2</sup> /s (104 °F / 40 °C)
		8.92 mm <sup>2</sup> /s (212 °F / 100 °C)
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 : None known.

Conditions to avoid : None known.

Incompatible materials : Strong oxidizing agents

Hazardous decomposition products : Emits acid smoke and fumes when heated to decomposition.

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

Not classified based on available information.

**Product:**

Acute oral toxicity : LD50 Oral (Rat): > 10,000 mg/kg

Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : LD50 Dermal (Rabbit): > 3,160 mg/kg  
Remarks: Read-across from a similar material

**Components:****Phenol, isopropylated, phosphate (3:1):**

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg  
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity : LC50 (Rat): > 200 mg/m3  
Exposure time: 1 h  
Assessment: The substance or mixture has no acute inhalation toxicity

Acute dermal toxicity : LD50 Dermal (Rabbit): > 10,000 mg/kg  
Assessment: The substance or mixture has no acute dermal toxicity

**Skin corrosion/irritation**

Not classified based on available information.

**Product:**

Species : Rabbit

Assessment : Not classified as hazardous.

Result : slight

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Remarks : Read-across from a similar material

**Components:****Phenol, isopropylated, phosphate (3:1):**

Species : Rabbit  
Assessment : Not classified

**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:****Phenol, isopropylated, phosphate (3:1):**

Species : Rabbit  
Result : none  
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 : Weight of evidence  
Assessment : Not classified  
Remarks : Read-across from a similar material

**Germ cell mutagenicity**

Not classified based on available information.

**Product:**

Genotoxicity in vitro : Test Type: Mutagenicity  
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.

**Carcinogenicity**

Not classified based on available information.

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**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 or the unborn child if swallowed.

**Product:**

Effects on fertility                :    Remarks: No data available

**Components:****Phenol, isopropylated, phosphate (3:1):**

Effects on fertility                :    Species: Rat, male and female  
Application Route: Oral  
General Toxicity Parent: NOAEL: 25 milligram per kilogram  
Remarks: Suspected of damaging fertility or the unborn child.

**STOT-single exposure**

Not classified based on available information.

**Product:**

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

**Components:****Phenol, isopropylated, phosphate (3:1):**

Remarks                            :    Not classified due to data which are conclusive although insufficient for classification.

**STOT-repeated exposure**

May cause damage to organs through prolonged or repeated exposure.

**Components:****Phenol, isopropylated, phosphate (3:1):**

Assessment                         :    May cause damage to organs through prolonged or repeated exposure.

**Aspiration toxicity**

Not classified based on available information.



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**Product:**

Not classified

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

Inhalation	:	Remarks: None known.
Skin contact	:	Remarks: None known.
Eye contact	:	Remarks: None known.
Ingestion	:	Remarks: May cause damage to organs through prolonged or repeated exposure. Suspected of damaging fertility or the unborn child if swallowed.

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: No data available
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**Components:****Phenol, isopropylated, phosphate (3:1):**

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.36 mg/l Exposure time: 96 h
		LC50 (Cyprinodon variegatus (sheepshead minnow)): > 1.3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	LC50 (Daphnia magna (Water flea)): 1 mg/l Exposure time: 48 h
		LC50 (Mysidopsis bahia (opossum shrimp)): > 1 mg/l
Toxicity to algae/aquatic plants	:	NOEC (Desmodesmus subspicatus (green algae)): 0.25 - 2.5 mg/l Exposure time: 72 h Test Type: Alga, Growth Inhibition Test
M-Factor (Acute aquatic toxicity)	:	1
M-Factor (Chronic aquatic toxicity)	:	1

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**2,6-di-tert-butyl-p-cresol:**

M-Factor (Acute aquatic toxicity) : 1

**Persistence and degradability****Product:**

Biochemical Oxygen Demand (BOD) : Remarks: No data available

Chemical Oxygen Demand (COD) : Remarks: No data available

**Components:****Phenol, isopropylated, phosphate (3:1):**

Biodegradability : Remarks: Not readily biodegradable.

**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: Mixture  
Not applicable

**Components:****Phenol, isopropylated, phosphate (3:1):**

Bioaccumulation : Remarks: Potential bioaccumulation

**Mobility in soil****Components:****Phenol, isopropylated, phosphate (3:1):**

Distribution among environmental compartments : log Koc: 3.43 - 3.93

**Other adverse effects****Product:**

Results of PBT and vPvB assessment : Not fulfilling vPvB (very persistent, very bioaccumulative) criteria.

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

Waste from residues : This product meets the criteria for a synthetic used oil under the U.S. EPA Standards for the Management of Used Oil (40

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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.

Dispose of in accordance with local regulations.

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**SECTION 14. TRANSPORT INFORMATION****International Regulations****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

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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  
Specific target organ toxicity (single or repeated exposure)

**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:**

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

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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

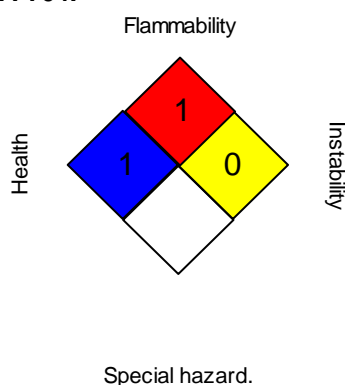
TCSI : On the inventory, or in compliance with the inventory

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

**TSCA list**

No substances are subject to a Significant New Use Rule.

**The following substance(s) is/are subject to TSCA 12(b) export notification requirements:**  
 Phenol, isopropylated, phosphate (3:1) 68937-41-7

**SECTION 16. OTHER INFORMATION****Further information****NFPA 704:****HMIS® IV:**

<b>HEALTH</b>	*	<b>2</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.

**Full text of other abbreviations**

ACGIH : USA. ACGIH Threshold Limit Values (TLV)

NIOSH REL : USA. NIOSH Recommended Exposure Limits

OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

ACGIH / TWA : 8-hour, time-weighted average

NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek

OSHA P0 / TWA : 8-hour time weighted average

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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

Sources of key data used to compile the Material Safety Data Sheet : [www.EastmanAviationSolutions.com](http://www.EastmanAviationSolutions.com)

Revision Date : 08/14/2019

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.

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