SAFETY DATA SHEET

Eastman(TM) DOP Plasticizer

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) DOP Plasticizer
Product code : 00401-00, P0040101, P0040100, E0040101, P0040107, P0040108, P0040109, E0040102

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 : Plasticizer
Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Carcinogenicity : Category 2
Reproductive toxicity : Category 1B

GHS label elements
Hazard pictograms :

Signal Word : Danger
Hazard Statements :
H351 Suspected of causing cancer.
H360 May damage fertility or 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.

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

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>di(2-ethylhexyl) phthalate (DEHP)</td>
<td>117-81-7</td>
<td>100</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

If inhaled: Remove to fresh air. Treat symptomatically. Get medical advice/ attention.

In case of skin contact: Wash off with soap and water. Get medical attention if symptoms occur.

In case of eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

If swallowed: Seek medical advice.

Most important symptoms and effects, both acute and delayed: Suspected of causing cancer. May damage fertility or the unborn child.

Notes to physician: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use water spray to extinguish. Dry chemical. Carbon dioxide (CO2). Foam.

Unsuitable extinguishing media: None known.

Specific hazards during firefighting: None known.
Hazardous combustion products: No hazardous combustion products are 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: Wear appropriate personal protective equipment. Avoid release to the environment.

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 protection against fire and explosion: None known.

Advice on safe handling: Do not taste or swallow. Wash thoroughly after handling.

Conditions for safe storage: Keep container tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters / Permissible concentration</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>di(2-ethylhexyl) phthalate (DEHP)</td>
<td>117-81-7</td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>ACGIH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ST</td>
<td>10 mg/m³</td>
<td>NIOSH REL</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>OSHA Z-1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA</td>
<td>5 mg/m³</td>
<td>OSHA P0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>STEL</td>
<td>10 mg/m³</td>
<td>OSHA P0</td>
</tr>
</tbody>
</table>

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**: 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.

**Hand protection**

**Remarks**: Wear suitable gloves.

**Eye protection**: Safety glasses with side-shields

**Skin and body protection**: Wear suitable protective clothing.

**Protective measures**: Wear suitable protective equipment.

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

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance**: liquid

**Color**: colorless

**Odor**: slight

**Odor Threshold**: not determined

**pH**: not determined

**Melting point/freezing point**: -58 °F / -50 °C

**Boiling point/boiling range**: 723 °F / 384 °C

**Flash point**: 421 °F / 216 °C

Method: Cleveland open cup

**Evaporation rate**: not determined

**Upper explosion limit / Upper flammability limit**: not determined

**Vapor pressure**: 0.0000001 mbar (68 °F / 20 °C)
Relative vapor density: 13.5
Relative density: 0.985 (68 °F / 20 °C)

Solubility (ies)
Water solubility: 0.1 g/l

Partition coefficient: n-octanol/water
Pow: 75,858
log Pow: 4.88

Autoignition temperature: 720 °F / 382 °C
Method: ASTM D2155

Decomposition temperature: > 739 °F / > 393 °C
Method: DTA
No exotherm

Viscosity
Viscosity, dynamic: 56.6 mPa.s (77 °F / 25 °C)
Viscosity, kinematic: 57.46 mm²/s (77 °F / 25 °C)

Explosive properties: No data available
Oxidizing properties: No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity: Stable under recommended storage conditions.
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: Carbon dioxide (CO2)
Carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

Product:
Acute oral toxicity: LD50 Oral (Rat): > 5,000 mg/kg
Acute inhalation toxicity: LC50 (Rat): > 10.62 mg/l
Exposure time: 4 h
Remarks: (highest concentration tested)
no deaths from exposure to nearly saturated vapor

Acute dermal toxicity
LD50 Dermal (Rabbit): 19,800 mg/kg

Skin corrosion/irritation
Not classified based on available information.

Product:
Species: Rabbit
Exposure time: 24 h
Result: slight

Serious eye damage/eye irritation
Not classified based on available information.

Product:
Species: Rabbit
Result: none

Respiratory or skin sensitization

Skin sensitization
Not classified based on available information.

Respiratory sensitization
Not classified based on available information.

Product:
Test Type: Skin Sensitization
Species: Guinea pig
Result: none

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Suspected of causing cancer.

Product:
Remarks: IARC 2B: possibly carcinogenic to humans.
NTP reasonably anticipated to be a carcinogen.
OSHA Not Listed.

Carcinogenicity - Assessment
IARC 2B: possibly carcinogenic to humans., NTP reasonably anticipated to be a carcinogen.

IARC
Group 2B: Possibly carcinogenic to humans
di(2-ethylhexyl) phthalate (DEHP) 117-81-7

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 Reasonably anticipated to be a human carcinogen
di(2-ethylhexyl) phthalate (DEHP) 117-81-7

Reproductive toxicity
May damage fertility or the unborn child.

Product:
Effects on fertility : Remarks: No data available

Reproductive toxicity - Assessment : May damage fertility or the unborn child.

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.

Product:
No data available

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 : DEHP, di (2-ethylhexyl) phthalate, was administered to rats and mice in a lifetime bioassay sponsored by the U.S. National Toxicology Program (NTP). High feed concentrations (mice: 3000 and 6000 ppm; rats: 6000 and 12,000 ppm) were used because of the very low toxicity of di (2-ethylhexyl) phthalate.
Liver tumors were produced at both dose levels in each species. Oral doses of this material that were high enough to cause toxicity in pregnant animals also produced some minor abnormalities in their offspring. High oral doses of this material given to male animals produced reduced fertility. However, high doses to humans handling this material are not expected since oral consumption is not a likely route of significant exposure. DEHP probably presents a negligible carcinogenic risk to humans at exposure levels typical of occupational or consumer use.

**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product**: Toxicity to fish

<table>
<thead>
<tr>
<th>Test Species</th>
<th>LC50</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pimephales promelas (fathead minnow)</td>
<td>&gt; 0.67 mg/l</td>
<td>96 h</td>
<td>(limit of solubility in fresh water)</td>
</tr>
<tr>
<td>Oncorhynchus mykiss (rainbow trout)</td>
<td>&gt; 0.32 mg/l</td>
<td>96 h</td>
<td>(limit of solubility in fresh water)</td>
</tr>
<tr>
<td>Cyprinodon variegatus (sheepshead minnow)</td>
<td>&gt; 0.17 mg/l</td>
<td>96 h</td>
<td>(limit of solubility in fresh water)</td>
</tr>
<tr>
<td>Lepomis macrochirus (Bluegill sunfish)</td>
<td>&gt; 0.20 mg/l</td>
<td>96 h</td>
<td>(limit of solubility in fresh water)</td>
</tr>
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</table>

NOEC:

<table>
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<tr>
<th>Test Species</th>
<th>NOEC</th>
<th>Exposure time</th>
<th>Remarks</th>
</tr>
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</tr>
</tbody>
</table>
Toxicity to daphnia and other aquatic invertebrates:
- LC50 (Daphnia magna (Water flea)): > 0.16 mg/l
  - Exposure time: 96 h
  - Remarks: (limit of solubility in fresh water)
- NOEC: (Daphnia magna (Water flea)): > 0.16 mg/l
  - Exposure time: 96 h
  - Remarks: (limit of solubility in fresh water)

Toxicity to algae/aquatic plants:
- EC50 (Selenastrum capricornutum (green algae)): > 0.10 mg/l
  - Exposure time: 96 h

Persistence and degradability:
No data available

Bioaccumulative potential:
No data available

Mobility in soil:
No data available

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 Regulations

IATA-DGR
Not regulated as a dangerous good
Remarks:
- 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; otherwise, not regulated.

IMDG-Code
Not regulated as a dangerous good
Remarks:
- 9, Packing Group III when material is shipped in quantities in one package at or above the Reportable Quantity and when no other hazard class applies; otherwise, not regulated.

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
UN/ID/NA number: UN 3082
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (bis(2-ethylhexyl) phthalate)
Special precautions for user
The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component RQ (lbs)</th>
<th>Calculated product RQ (lbs)</th>
</tr>
</thead>
</table>

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

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Component TPQ (lbs)</th>
</tr>
</thead>
</table>

SARA 311/312 Hazards: Chronic Health Hazard

SARA 313: The following components are subject to reporting levels established by SARA Title III, Section 313:

- di(2-ethylhexyl) phthalate (DEHP)
- 117-81-7

California Prop. 65
WARNING: This product can expose you to chemicals including di(2-ethylhexyl) phthalate (DEHP), which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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

- TCSI: On the inventory, or in compliance with the inventory
- TSCA: All substances listed as active on the TSCA inventory
- AICS: On the inventory, or in compliance with the inventory
- DSL: All components of this product are on the Canadian DSL
- ENCS: On the inventory, or in compliance with the inventory
SECTION 16. OTHER INFORMATION

Further information

**HMIS® IV:**

- **HEALTH**: *
- **FLAMMABILITY**: 1
- **PHYSICAL HAZARD**: 0

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
- OSHA Z-1: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- 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
- NIOSH REL / ST: STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- OSHA P0 / TWA: 8-hour time weighted average
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.