SAFETY DATA SHEET

Eastman 168(TM) non-phthalate plasticizer

Version 1.3  Revision Date: 05/30/2019  SDS Number: 150000072819  Date of last issue: 12/11/2018
PRD  SDSUS / Z8 / 0001  Date of first issue: 09/06/2016

SECTION 1. IDENTIFICATION

Product name: Eastman 168(TM) non-phthalate plasticizer

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
Not a hazardous substance or mixture.
GHS label elements
Not a hazardous substance or mixture.
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>bis(2-ethylhexyl) terephthalate</td>
<td>6422-86-2</td>
<td>&gt; 98</td>
</tr>
<tr>
<td>2-ethylhexyl methyl terephthalate</td>
<td>63468-13-3</td>
<td>&lt; 2</td>
</tr>
</tbody>
</table>

SECTION 4. FIRST AID MEASURES

If inhaled: Move to fresh air. Treat symptomatically. If symptoms persist, call a physician.

In case of skin contact: Wash off with soap and water.
If symptoms persist, call a physician.

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: None known.

Notes to physician: Treat symptomatically.

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.

Specific hazards during fire fighting: 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: 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: 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 safe handling: Wash thoroughly after handling.
Use only in area provided with appropriate exhaust ventilation.
Conditions for safe storage: Keep tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: liquid
Color: colorless
Odor: mild
Odor Threshold: not determined
pH: not determined
Melting point/freezing point: < -89.0 °F / < -67.2 °C
Boiling point/boiling range: 707 °F / 375 °C
Flash point: 414 °F / 212 °C
Method: Seta closed cup
Evaporation rate: not determined
Flammability (solid, gas): Not applicable
Self-ignition: 729 °F / 387 °C
Method: ASTM E659
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Upper explosion limit / Upper flammability limit: not determined
Lower explosion limit / Lower flammability limit: not determined
Vapor pressure: < 0.001 Pa (77 °F / 25 °C)
Relative vapor density: 13.47
Relative density: 0.9831 (68 °F / 20 °C)
Solubility(ies)
   Water solubility: < 0.00001 g/l (77 °F / 25 °C)
Partition coefficient: n-octanol/water: log Pow: 8.39 (77 °F / 25 °C)
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: 66.9 mm2/s (77 °F / 25 °C)
Explosive properties: Not classified
Oxidizing properties: Not classified
Surface tension: 32.7 mN/m, 72 °F / 22 °C

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 monoxide
                                        Carbon dioxide (CO2)
SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity
Not classified based on available information.

**Product:**
Acute oral toxicity: LD50 Oral (Rat): > 5,000 mg/kg
   Remarks: (highest dose tested)

Acute inhalation toxicity: LCLo (Rat): > 0.0718 mg/l
   Exposure time: 6 h
   Remarks: (highest concentration tested)

Skin corrosion/irritation
Not classified based on available information.

**Product:**
Species: Rabbit
Exposure time: 24 h
Result: none

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

**Product:**
Species: Rabbit
Result: slight
Remarks: No data available

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: non-sensitizing

Germ cell mutagenicity
Not classified based on available information.

**Product:**
Genotoxicity in vitro: Test Type: Mutagenicity - Bacterial
   Metabolic activation: +/- activation
   Result: negative
Test Type: Chromosome aberration test in vitro  
Metabolic activation: +/- activation  
Result: negative

Test Type: Mutagenicity - Mammalian  
Metabolic activation: +/- activation  
Result: negative

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  
Not classified based on available information.

Product:  
Effects on fertility: Remarks: No data available

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

Repeated dose toxicity  

Product:  
Species: Rat  
277 mg/kg  
Application Route: in feed  
Exposure time: 90 d
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.

**SECTION 12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

**Product:**

**Toxicity to fish:**
NOEC: (Fish): >= 0.25 mg/l  
Exposure time: 7 d  
Remarks: (limit of solubility in fresh water)

LC50 (Pimephales promelas (fathead minnow)): > 984 mg/l  
Exposure time: 96 h

**Toxicity to daphnia and other aquatic invertebrates:**
NOEC: (daphnid): >= 0.0014 mg/l  
Exposure time: 48 h  
Remarks: (limit of solubility in fresh water)

**Toxicity to algae/aquatic plants:**
NOEC: (Chlorella pyrenoidosa): >= 0.86 mg/l  
Exposure time: 72 h  
Remarks: (limit of solubility in fresh water)

**Toxicity to fish (Chronic toxicity):**
NOEC: (Oncorhynchus mykiss (rainbow trout)): >= 0.28 mg/l  
Exposure time: 60 d  
Remarks: (limit of solubility in fresh water)

**Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity):**
NOEC: (daphnid): >= 0.00076 mg/l  
Exposure time: 21 d  
Remarks: (limit of solubility in fresh water)

**Persistence and degradability**

**Product:**

Biodegradability: Readily biodegradable.  
Biodegradation: 73.05 %  
Exposure time: 28 d  
Method: Ready Biodegradability: CO2 Evolution Test
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

IMDG-Code
Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Pollution category : Y
Ship type : 2

Domestic regulation

49 CFR
Not regulated as a dangerous good

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 : No SARA Hazards

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 require a warning for chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

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
- **ISHL**: 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**: All substances listed as active on the TSCA inventory

**TSCA list**
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

HMIS® IV:

<table>
<thead>
<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
</tr>
</thead>
<tbody>
<tr>
<td>/ 1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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

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

Revision Date: 05/30/2019

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.

US / Z8