SAFETY DATA SHEET

Eastman(TM) Cellulose Acetate Butyrate
(CAB-381-20)

Version 2.2  Revision Date: 04/25/2018  SDS Number: 150000001229  Date of last issue: 01/16/2018
PRD  Date of first issue: 09/06/2016  SDSUS / 28 / 0001

SECTION 1. IDENTIFICATION

Product name: Eastman(TM) Cellulose Acetate Butyrate (CAB-381-20)


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: Polymer
Restrictions on use: None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200
Combustible dust

GHS label elements
Signal Word: Warning
Hazard Statements: May form combustible dust concentrations in air.
Precautionary Statements: Prevention:
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P243 Take action to prevent static discharges.
Disposal:
P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.
Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Concentration (% w/w)</th>
</tr>
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<tbody>
<tr>
<td>cellulose acetate butyrate</td>
<td>9004-36-8</td>
<td>100</td>
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</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.
Cool skin rapidly with cold water after contact with molten material.
Do not peel solidified product off the skin.
Burns must be treated by a physician.

In case of eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Remove contact lenses, if present and easy to do. Continue rinsing.

If swallowed: Seek medical advice.

Most important symptoms and effects, both acute and delayed: The molten product can cause serious burns.

Notes to physician: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Water spray
Dry chemical
Carbon dioxide (CO2)

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

Specific hazards during fire fighting: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.
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Hazardous combustion products: No hazardous combustion products are known

Further information: Minimize dust generation and accumulation.

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. 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 and shovel into suitable containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion: Minimize dust generation and accumulation.

Advice on safe handling: Mixing cellulose esters in a nonpolar hydrocarbon, such as toluene or xylene, may result in the buildup of static electricity, which can cause a flash fire or an explosion. When adding cellulose ester to any flammable liquid, an inert gas atmosphere should be maintained within the vessel.

Conditions for safe storage: Keep container tightly closed.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

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

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. When handling hot material, use heat resistant gloves.

Eye protection:

Safety glasses

Wear a face shield when working with molten material.

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.

Hygiene measures:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

powder

Color:

white

Odor:

slight, characteristic

Odor Threshold:

not determined

pH:

not determined

Melting point/range:

127 - 240 °C

Boiling point/boiling range:

not determined

Flash point:

not applicable, combustible solid

Evaporation rate:

Not applicable

Flammability (solid, gas):

Combustible Solids

Upper explosion limit:

not determined

Lower explosion limit:

not determined

Vapor pressure:

Not applicable

Relative vapor density:

No data available

not determined

Relative density:

> 1
Solubility(ies)
- Water solubility: negligible

Partition coefficient: n-octanol/water
- No data available

Autoignition temperature
- Not determined

Decomposition temperature
- 302.95 °C
  Method: DSC

Viscosity
- Viscosity, dynamic: No data available
- not determined
- Viscosity, kinematic: Not applicable

Explosive properties
- No data available

Oxidizing properties
- No data available

Dust deflagration index (Kst)
- 213 m.b_/s
  Method: ASTM E1226-88

Dust explosion class
- St1

SECTION 10. STABILITY AND REACTIVITY

Reactivity
- None reasonably foreseeable.

Chemical stability
- Stable under normal conditions.

Conditions to avoid
- Minimize dust generation and accumulation.

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
  Remarks: No data available
Acute inhalation toxicity : Remarks: No data available

Acute dermal toxicity : Remarks: No data available

Skin corrosion/irritation
Not classified based on available information.

Product:
Remarks: No data available

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

Product:
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:
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
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:
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: Molten material will produce thermal burns.
Eye contact : Remarks: Molten material will produce thermal burns.
Ingestion : Remarks: None known.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available

Persistence and degradability
No data available

Bioaccumulative potential
No data available
Mobility in soil
No data available

Other adverse effects

Product:
Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

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
Not applicable for product as supplied.

Domestic regulation

49 CFR
Not regulated as a dangerous good

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

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 : Fire Hazard

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.
This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

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:

CH INV : On the inventory, or in compliance with the inventory

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

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

NZIoC : 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 : 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.

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 -
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- 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; RO - 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

Further information

NFPA:

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Instability</th>
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<tr>
<td>1</td>
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Special hazard.

HMIS® IV:

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<tr>
<th>HEALTH</th>
<th>FLAMMABILITY</th>
<th>PHYSICAL HAZARD</th>
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<tr>
<td>/ 1</td>
<td>1</td>
<td>0</td>
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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 : 04/25/2018

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