

Eastman(TM) Butyraldehyde, Dry

Version 2.1 PRD Revision Date: 08/03/2018 SDS Number: 150000000216 SDSUS / Z8 / 0001 Date of last issue: - Date of first issue: 09/06/2016

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) Butyraldehyde, Dry

Product code : 03986-00, P0398601, P0398602, P0398604, P0398605, P03986S0, P03986S3, P03986S1, E0398601, P0398606, E0398602

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 : Solvent

Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Flammable liquids : Category 2

Skin irritation : Category 2

Eye irritation : Category 2A

Specific target organ systemic toxicity - single exposure : Category 3 (Respiratory system, Central nervous system)

GHS label elements

Hazard pictograms : 

Signal Word : Danger

Hazard Statements : H225 Highly flammable liquid and vapor.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

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H336 May cause drowsiness or dizziness.

Precautionary Statements

:

Prevention:

P210 Keep away from heat/sparks/open flames/hot surfaces.
No smoking.

P233 Keep container tightly closed.

P240 Ground/bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242 Use only non-sparking tools.

P243 Take precautionary measures against static discharge.

P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.

P264 Wash skin thoroughly after handling.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332 + P313 If skin irritation occurs: Get medical advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/ attention.

P362 Take off contaminated clothing and wash before reuse.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

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)
butyraldehyde	123-72-8	> 96
Water	7732-18-5	< 4

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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 immediately with soap and plenty of water while removing all contaminated clothes and shoes.
Wash contaminated clothing before re-use.
Get medical attention.
Thoroughly clean shoes before reuse.
- In case of eye contact : Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
- If swallowed : Seek medical advice.
- Most important symptoms and effects, both acute and delayed : Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.
May cause drowsiness or dizziness.
- Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Carbon dioxide (CO2)
Dry chemical
Water spray
- Specific hazards during fire fighting : Water may be ineffective.
The product will float on water and can be reignited on surface water.
- Further information : Flammable liquid and vapor.
Use water spray to cool unopened containers.
- 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 : 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 /

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national regulations (see section 13).
 After cleaning, flush away traces with water.
 Eliminate all ignition sources if safe to do so.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : None known.
- Advice on safe handling : Avoid inhalation of vapor or mist.
 Do not get in eyes.
 Avoid contact with skin, eyes and clothing.
 Ensure adequate ventilation.
 Wash thoroughly after handling.
 Keep away from fire (No Smoking).
 Keep away from fire, sparks and heated surfaces.
 Do not use sparking tools.
- Conditions for safe storage : Keep container closed when not in use.
 Store locked up.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Ingredients	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
butyraldehyde	123-72-8	TWA	25 ppm	US WEEL
butyraldehyde	123-72-8	TWA	25 ppm	US WEEL

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 : Wear safety glasses with side shields (or goggles).
 Face-shield
 Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.

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.

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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	: liquid
Color	: colorless
Odor	: pungent
Odor Threshold	: not determined
pH	: not determined
Melting point/freezing point	: -146 °F / -99 °C
Boiling point/boiling range	: 167 °F / 75 °C
Flash point	: 9 °F / -13 °C
	Method: Seta closed cup
Evaporation rate	: not determined
Upper explosion limit / Upper flammability limit	: not determined
Lower explosion limit / Lower flammability limit	: not determined
Vapor pressure	: not determined
Relative vapor density	: 2.5
Relative density	: 0.802 - 0.807 (68 °F / 20 °C)
Solubility(ies)	
Water solubility	: 60 g/l
Partition coefficient: n-octanol/water	: Pow: 7.6 log Pow: 0.88
Autoignition temperature	: 390 °F / 199 °C Method: ASTM E659
Decomposition temperature	: Method: DTA No exotherm
Viscosity	
Viscosity, dynamic	: not determined

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Viscosity, kinematic	:	not determined
Explosive properties	:	No data available
Oxidizing properties	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Stable
Conditions to avoid	:	Heat, flames and sparks.
Incompatible materials	:	Strong oxidizing agents
Hazardous decomposition products	:	Carbon dioxide (CO ₂) carbon monoxide

SECTION 11. TOXICOLOGICAL INFORMATION**Acute toxicity**

Not classified based on available information.

Product:

Acute oral toxicity	:	LD50 Oral (Rat): 5,900 mg/kg	Remarks: None.
Acute inhalation toxicity	:	LC50 (Rat): 60000 ppm Exposure time: 0.5 h	Remarks: No significant adverse effects were reported
Acute dermal toxicity	:	LD50 Dermal (Guinea pig): > 16,000 mg/kg	Remarks: No significant adverse effects were reported

Ingredients:**butyraldehyde:**

Acute oral toxicity	:	LD50 Oral (Rat): 5,890 mg/kg
Acute inhalation toxicity	:	LC50 (Rat): > 5,460 mg/l Exposure time: 4 h
Acute dermal toxicity	:	LD50 Dermal (Rabbit): > 2,000 mg/kg

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Skin corrosion/irritation

Causes skin irritation.

Product:

Species : Guinea pig
Result : slight

Remarks : Causes skin irritation.

Ingredients:**butyraldehyde:**

Assessment : irritating

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Species : Rabbit
Result : strong

Remarks : No data available

Remarks : Causes eye irritation.

Ingredients:**butyraldehyde:**

Species : Rabbit
Result : slight
Exposure time : 24 h

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

Ingredients:**butyraldehyde:**

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

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Eye contact : Remarks: Causes serious eye irritation.

Ingestion : Remarks: None known.

Further information**Product:**

Remarks : None known.

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

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 25.8 mg/l
Exposure time: 96 h

LC50 (golden orfe): 57 - 114 mg/l
Exposure time: 48 h

Ingredients:**butyraldehyde:**

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 25.8 mg/l
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia): 195 mg/l
aquatic invertebrates Exposure time: 24 h

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).

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SECTION 13. DISPOSAL CONSIDERATIONS**Disposal methods**

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

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

UN/ID No. : UN 1129
Proper shipping name : Butyraldehyde
Class : 3
Packing group : II
Labels : Flammable Liquids
Packing instruction (cargo : 364
aircraft)
Packing instruction (passen- : 353
ger aircraft)

IMDG-Code

UN number : UN 1129
Proper shipping name : BUTYRALDEHYDE

Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-D
Marine pollutant : no

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 1129
Proper shipping name : Butyraldehyde

Class : 3
Packing group : II
Labels : Class 3 - Flammable Liquid
ERG Code : 129
Marine pollutant : no

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.

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SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Ingredients	CAS-No.	Component	TPQ (lbs)
SARA 311/312 Hazards	:	Fire Hazard Acute Health Hazard	
SARA 313	:	The following components are subject to reporting levels established by SARA Title III, Section 313:	
		butyraldehyde	123-72-8 98.5 %

Clean Air Act

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 hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCOMI Intermediate or Final VOC's (40 CFR 60.489):

butyraldehyde	123-72-8	98.5 %
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Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

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

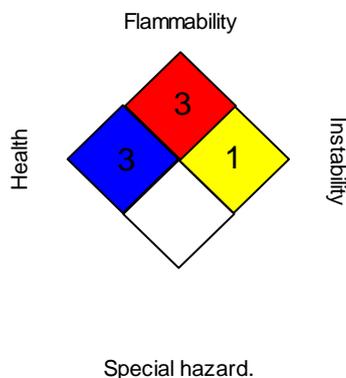
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
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	:	On the inventory, or in compliance with the inventory

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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:****HMIS® IV:**

HEALTH	/	3
FLAMMABILITY		3
PHYSICAL HAZARD		1

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

US WEEL : USA. Workplace Environmental Exposure Levels (WEEL)
US WEEL / TWA : 8-hr TWA

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

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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

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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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