

**Eastman(TM) Choline Chloride 70 Feed**

Version            Revision Date:            SDS Number:            Date of last issue: 04/04/2018  
2.3                07/01/2019                150000105871            Date of first issue: 09/22/2016  
PRD                                               SDSUS / Z8 / 0001

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**SECTION 1. IDENTIFICATION**

Product name                                : Eastman(TM) Choline Chloride 70 Feed  
Product code                                : 51002-00, P5100213, N5100210, P5100212, P5100211

**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                            : Feed additive  
Restrictions on use                         : None known.

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**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.

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**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS****Components**

| Chemical name    | CAS-No. | Concentration (% w/w) |
|------------------|---------|-----------------------|
| choline chloride | 67-48-1 | 70                    |

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**SECTION 4. FIRST AID MEASURES**

General advice                                : Show this material safety data sheet to the doctor in attendance.  
If inhaled                                        : Move to fresh air.  
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.

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In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.  
If easy to do, remove contact lens, if worn.

If swallowed : Consult a physician if necessary.

Most important symptoms and effects, both acute and delayed : None known.

Notes to physician : Treat symptomatically.

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**SECTION 5. FIRE-FIGHTING MEASURES**

Suitable extinguishing media : Carbon dioxide (CO<sub>2</sub>)  
Water spray  
Alcohol-resistant foam  
Dry sand

Unsuitable extinguishing media : None known.

Specific hazards during fire fighting : Thermal decomposition can lead to release of irritating gases and vapors.

Hazardous combustion products : Nitrogen oxides (NO<sub>x</sub>)  
Carbon oxides

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 self-contained breathing apparatus and protective suit.

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**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.  
Do not flush into surface water or sanitary sewer system.

Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Prevent further leakage or spillage if safe to do so.

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**SECTION 7. HANDLING AND STORAGE**

Advice on protection against : Keep product and empty container away from heat and

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fire and explosion : sources of ignition.

Advice on safe handling : Avoid contact with skin, eyes and clothing.  
Ensure adequate ventilation, especially in confined areas.

Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.

## 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**

Hand protection

Remarks : Rubber gloves Neoprene gloves The data about break through time/strength of material are standard values! The exact break through time/strength of material has to be obtained from the producer of the protective glove.

Eye protection : Safety glasses with side-shields

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 : liquid

Color : colorless

Odor : slight

Odor Threshold : not determined

pH : 6 - 9

Melting point/freezing point : 14 °F / -10 °C

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|  |   |  |
|--|---|--|
| Boiling point/boiling range                      | : | not determined   |
| Flash point                                      | : | > 392 °F / > 200 °C                                      |
| Evaporation rate                                 | : | not determined   |
| Flammability (solid, gas)                        | : | The product is not flammable.                            |
| Upper explosion limit / Upper flammability limit | : | not determined   |
| Lower explosion limit / Lower flammability limit | : | not determined   |
| Vapor pressure                                   | : | 10 hPa (77 °F / 25 °C)                                   |
| Relative vapor density                           | : | not determined   |
| Density  | : | 1.10 g/cm <sup>3</sup> (68 °F / 20 °C)                   |
| Solubility(ies)                                  | : |  |
| Water solubility                                 | : | soluble  |
| Partition coefficient: n-octanol/water           | : | log Pow: -3.77 (77 °F / 25 °C)                           |
| Autoignition temperature                         | : | No data available  |
| Decomposition temperature                        | : | 572 °F / 300 °C  |
| Viscosity  | : |  |
| Viscosity, dynamic                               | : | 26.2 mPa,s (68 °F / 20 °C)                               |
| Viscosity, kinematic                             | : | not determined   |
| Explosive properties                             | : | Not explosive  |
| Oxidizing properties                             | : | The substance or mixture is not classified as oxidizing. |
| Molecular weight                                 | : | 139.6 g/mol  |

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**SECTION 10. STABILITY AND REACTIVITY**

|                                    |   |  |
|------------------------------------|---|--|
| Reactivity                         | : | Stable under recommended storage conditions.                   |
| Chemical stability                 | : | Stable under normal conditions.                                |
| Possibility of hazardous reactions | : | Hazardous decomposition products formed under fire conditions. |
| Conditions to avoid                | : | Heat.  |

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Avoid moisture.

Incompatible materials            : Strong oxidizing agents

Hazardous decomposition        : Nitrogen oxides (NOx)  
products                                Carbon dioxide (CO2)  
    Gaseous hydrogen chloride (HCl).

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

Acute oral toxicity                : LD50 (Rat): 5,450 mg/kg

Acute inhalation toxicity        : Remarks: No data available

Acute dermal toxicity             : Remarks: No data available

**Skin corrosion/irritation****Product:**

Species                                : Rabbit

Result                                  : Non-irritating to the skin.

**Serious eye damage/eye irritation****Product:**

Species                                : Rabbit

Result                                  : No eye irritation

**Respiratory or skin sensitization****Product:**

Result                                  : Did not cause sensitization on laboratory animals.

**Germ cell mutagenicity****Product:**

Germ cell mutagenicity -        : Did not show mutagenic effects in animal experiments.  
Assessment

**Carcinogenicity****Product:**

Remarks                                : This product does not contain any carcinogens or potential  
    carcinogens as listed by OSHA, IARC or NTP.

Remarks                                : No significant adverse effects were reported

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**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****Product:**

Effects on fertility : Remarks: No data available

Reproductive toxicity - Assessment : Did not show teratogenic effects in animal experiments.

**STOT-single exposure****Product:**

Remarks : No data available

**STOT-repeated exposure****Product:**

Remarks : No data available

**Repeated dose toxicity****Product:**

Species : Rat  
NOAEL : 1,300 - 2,900 mg/kg  
Application Route : Oral

**Aspiration toxicity****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.

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

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 10,000 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): > 500 mg/l  
aquatic invertebrates Exposure time: 48 h

Toxicity to algae/aquatic : EC50 (Chlorella pyrenoidosa): > 500 mg/l  
plants Exposure time: 72 h

Toxicity to microorganisms : EC50 (Pseudomonas putida): 132.8 mg/l  
Exposure time: 17 h

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

Biodegradability : Remarks: Readily biodegradable

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

Bioaccumulation : Remarks: Bioaccumulation is unlikely.

**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 : In accordance with local and national regulations.  
Waste must be classified and labeled prior to recycling or disposal.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

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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

## SECTION 15. REGULATORY INFORMATION

## EPCRA - Emergency Planning and Community Right-to-Know

## SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

| Components | CAS-No. | Component TPQ (lbs) |
|------------|---------|---------------------|
|------------|---------|---------------------|

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.

## 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).

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

## 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:

TSCA : On TSCA Inventory

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



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|        |   |   |
|--------|---|---|
| NDSL   | : | Not in compliance with the inventory                  |
| AICS   | : | On the inventory, or in compliance with the inventory |
| ENCS   | : | Not 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 |
| EINECS | : | On the inventory, or in compliance with the inventory |
| ELINCS | : | Not in compliance with the inventory                  |
| NZIoC  | : | On the inventory, or in compliance with the inventory |
| TCSI   | : | 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.

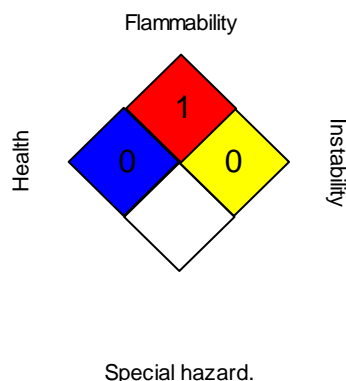
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## SECTION 16. OTHER INFORMATION

## Further information

## NFPA 704:



## HMIS® IV:

|                 |   |
|-----------------|---|
| HEALTH          | 0 |
| 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

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 -

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United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 07/01/2019

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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