

Eastman(TM) CHDM-D

PO00091311

Version	Revision Date:	SDS Number:	Date of last issue: 02/07/2019
2.4	09/01/2020	150000001802	Date of first issue: 09/06/2016
PRD		SDSUS / Z8 / 0001	N46 / 0090151766 / 0004272709

SECTION 1. IDENTIFICATION

Product name : Eastman(TM) CHDM-D

Product code : P06792N4

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 : Chemical intermediate

Restrictions on use : None known.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with 29 CFR 1910.1200

Serious eye damage : Category 1

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H318 Causes serious eye damage.

Precautionary Statements :

Prevention:

P280 Wear eye protection/ face protection.

Response:

P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/ doctor.

Disposal:

P501 Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regu-

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lations.

Other hazards

Molten material will produce thermal burns.

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

Chemical name	CAS-No.	Concentration (% w/w)
1,4-cyclohexanedimethanol	105-08-8	100

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.
Get medical attention if symptoms occur.

In case of eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Get immediate medical advice/ attention.

If swallowed : Seek medical advice.

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

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

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

Unsuitable extinguishing media : None known.

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 : In the event of fire, wear self-contained breathing apparatus.

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SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Wear appropriate personal protective equipment. Only qualified personnel equipped with suitable protective equipment may intervene.
- Environmental precautions : Avoid release to the environment.
- Methods and materials for containment and cleaning up : Flush with water. Clean contaminated surface thoroughly. Prevent runoff from entering drains, sewers, or streams.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : None known.
- Advice on safe handling : Do not get in eyes. Wash thoroughly after handling.
- 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. Wear a positive-pressure supplied-air respirator with full facepiece.
- Eye protection : Wear a face shield when working with molten material. Wear safety glasses with side shields (or goggles).
- Protective measures : PPE selections vary based on potential exposure conditions such as application, handling practices, concentration and ventilation.

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Information on the selection of protective equipment for use with this material is based upon intended, normal usage.

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

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Wax like
Color	:	off-white
Odor	:	mild
Odor Threshold	:	not determined
pH	:	Not applicable
Melting point/range	:	106 - 142 °F / 41 - 61 °C
Boiling point/boiling range	:	545.9 °F / 285.5 °C
Flash point	:	334 °F / 168 °C
		Method: Seta closed cup
Evaporation rate	:	not determined
Flammability (solid, gas)	:	Not applicable
Self-ignition	:	601 °F / 316 °C
		Method: ASTM E659
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Vapor pressure	:	< 0.24 Pa (68 °F / 20 °C)
Relative vapor density	:	5
Relative density	:	1.082
Solubility(ies)		
Water solubility	:	34 - 143 g/l (77 °F / 25 °C)
Partition coefficient: n-octanol/water	:	log Pow: 0.36 - 1.49 (77 °F / 25 °C)

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Autoignition temperature	:	not determined
Decomposition temperature	:	Method: HPDTA No exotherm to 400°C
Self-Accelerating decomposition temperature (SADT)	:	GLP: Not applicable
Viscosity		
Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable
Explosive properties	:	Not classified
Oxidizing properties	:	Not classified
Surface tension	:	Not applicable

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	None known. Stable
Conditions to avoid	:	Incompatible materials
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): > 2,000 mg/kg
Acute inhalation toxicity	:	Remarks: No data available
Acute dermal toxicity	:	LD50 Dermal (Guinea pig): > 1,000 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Species	:	Rabbit
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Exposure time : 24 h
Result : none

Components:**1,4-cyclohexanedimethanol:**

Species : Rabbit
Exposure time : 24 h
Result : none

Serious eye damage/eye irritation

Causes serious eye damage.

Product:

Species : Rabbit
Result : Corrosive
Exposure time : 24 h

Remarks : No data available

Components:**1,4-cyclohexanedimethanol:**

Species : Rabbit
Result : Corrosive
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:

Test Type : OECD 406: Guinea pig sensitization
Species : Guinea pig
Result : non-sensitizing

Components:**1,4-cyclohexanedimethanol:**

Test Type : OECD 406: Guinea pig sensitization
Species : Guinea pig
Result : Did not cause sensitization on laboratory animals.

Germ cell mutagenicity

Not classified based on available information.

Product:

Genotoxicity in vitro : Test Type: Mutagenicity - Mammalian

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Metabolic activation: +/- activation
 Method: In vitro Mammalian Cell Gene Mutation Test
 Result: negative

Genotoxicity in vivo : Species: Rat
 Application Route: oral: gavage
 Method: Mammalian Bone Marrow Chromosome Aberration Test
 Result: negative

Components:**1,4-cyclohexanedimethanol:**

Genotoxicity in vitro : Test Type: Mutagenicity - Mammalian
 Metabolic activation: +/- activation
 Method: In vitro Mammalian Cell Gene Mutation Test
 Result: negative

Test Type: Ames test
 Result: negative
 Remarks: National Toxicology Program Study

Genotoxicity in vivo : Species: Rat
 Application Route: oral: gavage
 Method: Mammalian Bone Marrow Chromosome Aberration Test
 Result: negative

Carcinogenicity

Not classified based on available information.

Product:

Remarks : This information is not available.

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

Components:**1,4-cyclohexanedimethanol:**

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Effects on fertility : Species: Rat, male and female
Application Route: Ingestion
General Toxicity Parent: NOAEL: 479 mg/kg body weight
Method: OECD Test Guideline 421

Species: Rat, male and female
Application Route: Ingestion
General Toxicity Parent: NOAEL: 700 mg/kg body weight
Method: OECD Test Guideline 443

STOT-single exposure

Not classified based on available information.

Product:

Remarks : No data available

Components:**1,4-cyclohexanedimethanol:**

Assessment : Not classified

STOT-repeated exposure

Not classified based on available information.

Product:

Remarks : No data available

Components:**1,4-cyclohexanedimethanol:**

Assessment : Not classified

Repeated dose toxicity**Product:**

Species : Rat, male
: 479 mg/kg
Application Route : in drinking water
Exposure time : 90 d

Species : Rat, female
: 754 mg/kg
Application Route : in drinking water
Exposure time : 90 h

Components:**1,4-cyclohexanedimethanol:**

Species : Rat, male
: 479 mg/kg
Application Route : in drinking water

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Exposure time : 90 d

Species : Rat, female
: 754 mg/kg

Application Route : in drinking water

Exposure time : 90 h

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: Causes serious eye damage.

Ingestion : Remarks: None known.

Further information**Product:**

Remarks : None known.

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

Toxicity to fish : LC50 (Fish): > 125.3 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa): > 122.9 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Fish): >= 125.3 mg/l

Components:**1,4-cyclohexanedimethanol:**

Toxicity to fish : LC50 (Fish): > 125.3 mg/l
Exposure time: 96 h

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Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia magna (Water flea)): > 100 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Chlorella pyrenoidosa): > 122.9 mg/l
Exposure time: 72 h

NOEC: (Chlorella pyrenoidosa): >= 122.9 mg/l
Exposure time: 72 h

Toxicity to fish (Chronic toxicity) : NOEC (Fish): >= 125.3 mg/l

Persistence and degradability**Product:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 99.2 %
Exposure time: 28 d
Method: Ready Biodegradability: DOC Die Away Test

Biochemical Oxygen Demand (BOD) : BOD-5:
25 mg/g
: BOD-20:
1,400 mg/g

Chemical Oxygen Demand (COD) : 2,400 mg/g

Components:**1,4-cyclohexanedimethanol:**

Biodegradability : Result: Readily biodegradable.
Biodegradation: 99.2 %
Exposure time: 28 d
Method: Ready Biodegradability: DOC Die Away Test

Biochemical Oxygen Demand (BOD) : BOD-5:
25 mg/g
BOD-20:
1,400 mg/g

Chemical Oxygen Demand (COD) : 2,400 mg/g

Bioaccumulative potential**Product:**

Bioaccumulation : Bioconcentration factor (BCF): 4.45
Method: estimated

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Components:**1,4-cyclohexanedimethanol:**Bioaccumulation : Bioconcentration factor (BCF): 4.45
Method: estimatedPartition coefficient: n- : log Pow: 0.36 - 1.47 (77 °F / 25 °C)
octanol/water**Mobility in soil****Product:**Distribution among environ- : log Koc: 0.499 - 1.6
mental compartments Method: QSAR model**Components:****1,4-cyclohexanedimethanol:**Distribution among environ- : log Koc: 0.499 - 1.6
mental compartments Method: QSAR model**Other adverse effects****Components:****1,4-cyclohexanedimethanol:**Results of PBT and vPvB : Not fulfilling vPvB (very persistent, very bioaccumulative) crite-
assessment ria.

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 : Solid forms of this product are not regulated. Forbidden on
aircraft if transported molten in bulk at temperatures equal to
or exceeding 100 C (212 F).**IMDG-Code**UN number : UN 3257
Proper shipping name : ELEVATED TEMPERATURE LIQUID, N.O.S.
(1,4-cyclohexanedimethanol)
Class : 9
Packing group : III

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Labels	: 9
EmS Code	: F-A, <u>S-P</u>
Marine pollutant	: no
Remarks	: 9, Packing Group III when liquid is offered for transport or is transported, in bulk packaging, at or above 100°C and below its flash point; 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 3257
Proper shipping name	: Elevated temperature liquid, n.o.s. (1,4-cyclohexanedimethanol)
Class	: 9
Packing group	: III
Labels	: CLASS 9
ERG Code	: 128
Marine pollutant	: no
Remarks	: 9, Packing Group III when liquid is offered for transport or is transported, in bulk packaging, at or above 100°C and below its flash point; otherwise, not regulated.

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**

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	: Acute Health Hazard
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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.
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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:

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
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

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

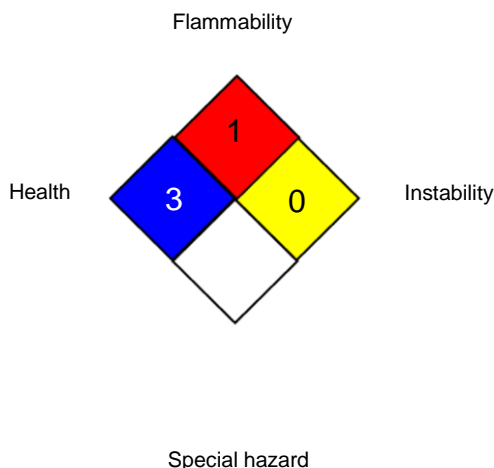
SECTION 16. OTHER INFORMATION**Further information**

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NFPA 704:



HMIS® IV:

HEALTH	/	3
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 - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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Revision Date : 09/01/2020

The information provided in this 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