

EC safety data sheet

Trade name: MXDA

Product no.: MGCE-006

Current version : 3.0.0, issued: 02.09.2019

Replaced version: 2.0.0, issued: 05.12.2016

Region: GB

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Trade name

MXDA

Substance name m-phenylenebis(methylamine)
REACH registration no. 01-2119480150-50

Identification numbers

CAS no. 1477-55-0
EC no. 216-032-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses of the substance or mixture

Industrial production of epoxy hardeners
industrial polymer production
Use of adhesives, coatings and composites in the construction industry
Use as intermediate

Uses advised against

Consumer use

Reference to relevant exposure scenarios

For an overview of the exact titles of the relevant exposure scenarios please refer to section 16 of this SDS.

1.3 Details of the supplier of the safety data sheet

Address

Mitsubishi Gas Chemical Europe GmbH
Immermannstraße 13
40210 Düsseldorf

Telephone no. +49 (0) 211-363 080
Fax no. +49 (0) 211-354 457

Advice on Safety Data Sheet

sdb_info@umco.de

1.4 Emergency telephone number

For medical advice (in German and English):
+49 (0)551 192 40 (Giftinformationszentrum Nord)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification in accordance with Regulation (EC) No 1272/2008 (CLP)

Acute Tox. 4; H302
Acute Tox. 4; H332
Aquatic Chronic 3; H412
Skin Corr. 1B; H314
Skin Sens. 1B; H317

Classification information

This product is assessed and classified using the methods and criteria below referred to in Article 9 of Regulation (EC) n° 1272/2008:
Physical hazards: determined through assessment data based on the methods or standards referred to in part 2 of Annex I to CLP
Health hazards and environmental hazards: determined through toxicological and ecotoxicological assessment data based on the methods or standards referred to in Part 3 and 4 of Annex I to CLP.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP Regulation)

Product identifier

1477-55-0 (m-phenylenebis(methylamine))

Hazard pictograms



GHS05



GHS07

Signal word

Danger

Hazard statement(s)

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H302+H332	Harmful if swallowed or if inhaled
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.
Hazard statements (EU)	
EUH071	Corrosive to the respiratory tract.
Precautionary statement(s)	
P260	Do not breathe mist/vapours/spray.
P264	Wash thoroughly after handling.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER/doctor.
P501	Dispose of contents/container to an approved incinerator.

2.3 Other hazards

PBT assessment

The product is not considered to be a PBT.

vPvB assessment

The product is not considered to be a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical characterization

Substance name m-phenylenebis(methylamine)

Identification numbers

CAS no. 1477-55-0

EC no. 216-032-5

3.2 Mixtures

Not applicable. The product is not a mixture.

3.3 Other information

Mono-constituent-substance

Chemical purity:

>= 99.92 to <= 99.99 % (w/w)

SECTION 4: First aid measures

4.1 Description of first aid measures

General information

Seek medical advice immediately. Remove contaminated clothing and shoes immediately, and launder thoroughly before reusing. If the patient is likely to become unconscious, place and transport in stable sideways position.

After inhalation

Remove affected person from the immediate area. Ensure supply of fresh air. Irregular breathing/no breathing: artificial respiration. Call a doctor immediately.

After skin contact

Wash off immediately with soap and water. Seek medical attention.

After eye contact

Remove contact lenses. Rinse eye thoroughly under running water keeping eyelids wide open and protecting the unaffected eye (at least 10 to 15 minutes). Seek medical assistance.

After ingestion

Do not induce vomiting. Rinse out mouth and give plenty of water to drink. Call a doctor immediately and show label or packaging. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

No data available.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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Suitable extinguishing media

Foam; Extinguishing powder; Water spray jet; Carbon dioxide

Unsuitable extinguishing media

High power water jet

5.2 Special hazards arising from the substance or mixture

In the event of fire, the following can be released: Carbon dioxide (CO₂); Carbon monoxide (CO); Nitrogen oxides (NO_x); Corrosive gases/vapours

5.3 Advice for firefighters

Fire-fighting operations, rescue and clearing work under effect of combustion and smoulder gases just may be done with breathing apparatus. Wear protective clothing. Cool endangered containers with water spray jet. Run-off water from fire fighting must not be discharged into drains or enter surface water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Refer to protective measures listed in sections 7 and 8. Avoid contact with skin, eyes and clothing. Ensure adequate ventilation.

For emergency responders

No data available. Personal protective equipment (PPE) - see Section 8.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3 Methods and material for containment and cleaning up

Take up with absorbent material (e.g., sand, kieselguhr, universal binder). When picked up, treat material as prescribed under heading "Disposal considerations".

6.4 Reference to other sections

No data available.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Product inherent handling risks must be minimised taking the appropriate measures for protection and preventive actions. The working process should be designed to rule out the release of hazardous substances or skin contact as far it is possible by the state of the art. Provide good ventilation at the work area (local exhaust ventilation, if necessary).

General protective and hygiene measures

Do not eat, drink or smoke during work time. Keep away from foodstuffs and beverages. Avoid contact with eyes and skin. Remove soiled or soaked clothing immediately. Wash hands before breaks and after work. Provide eye wash fountain in work area. Have emergency shower available. Do not inhale vapours.

Advice on protection against fire and explosion

Keep away from sources of heat and ignition. Use explosion-proof equipment/fittings and non-sparking tools. Take precautionary measures against static charges.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions

Keep container tightly closed in a cool, well-ventilated place.

Requirements for storage rooms and vessels

Containers which are opened must be carefully closed and kept upright to prevent leakage. Always keep in containers of same material as the original one.

Incompatible products

Do not store together with: Acids; oxidizing agents; Reducing agents; Do not store together with animal feedstocks. Do not store together with foodstuffs.

7.3 Specific end use(s)

No data available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

DNEL, DMEL and PNEC values

DNEL values (worker)

No	Substance name	CAS / EC no	
	Route of exposure	Exposure time	Effect Value

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1	m-phenylenebis(methylamine)			1477-55-0 216-032-5
	dermal	Long term (chronic)	systemic	0.33 mg/kg
	inhalative	Long term (chronic)	systemic	1.2 mg/m ³
	inhalative	Long term (chronic)	local	0.2 mg/m ³

PNEC values

No	Substance name	Type	CAS / EC no	Value
1	m-phenylenebis(methylamine)		1477-55-0 216-032-5	
	water	fresh water	0.094	mg/L
	water	marine water	0.0094	mg/L
	water	Aqua intermittent	0.152	mg/L
	water	fresh water sediment	0.43	mg/kg
	with reference to: dry mass			
	water	marine water sediment	0.043	mg/kg
	with reference to: dry mass			
	soil	-	0.045	mg/kg
	with reference to: dry mass			
	sewage treatment plant	-	10	mg/L

Other information

DNEL are not available

8.2 Exposure controls

Appropriate engineering controls

The substance is corrosive and a strict risk management is to be applied to prevent exposure of industrial or professional workers. Closed systems are required. Products containing the substance have to be dispensed via closed manual, battery operated or pneumatic devices.

Personal protective equipment

Respiratory protection

If workplace exposure limits are exceeded, a respiration protection approved for this particular job must be worn. In case of aerosol and mist formation, take appropriate measures for breathing protection in the event workplace threshold values are not specified. In case of accidental release, wear suitable respiratory protection equipment (isolating self-contained device).

Respirator K2

Eye / face protection

Safety glasses with side protection shield (EN 166)

Hand protection

Sufficient protection is given wearing suitable protective gloves checked according to i.e. EN 374, in the event of risk of skin contact with the product. Check in any case suitability of protective glove for the specific workplace conditions (e.g. mechanical resistance, product compatibility, antistatic properties). Adhere to the manufacturer's instructions and information relating to the use, storage, care and replacement of protective gloves.

Appropriate Material	butyl rubber		
Material thickness		0.5	mm
Breakthrough time	>=	480	min
Appropriate Material	Fluoro elastomer (FKM)		
Material thickness		0.4	mm
Breakthrough time	>=	480	min
Appropriate Material	neoprene		
Material thickness		0.5	mm
Breakthrough time	>=	480	min
Inappropriate material	nitrile rubber		
Inappropriate material	leather		
Inappropriate material	textile		

Other

Normal chemical work clothing. two components epoxy resins containing the substance have to be mixed carefully before use to ensure that the substance reacts and is not available after curing of the resin.

Environmental exposure controls

No data available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form/Colour
liquid
colourless
Odour

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amine-like	
Odour threshold	
No data available	
pH value	
Comments	untreated liquid: appr. pH 13
Boiling point / boiling range	
Value	272 °C
Reference pressure	101.3 kPa
Method	OECD 103
Source	CSR
Melting point / melting range	
Value	14 °C
Method	OECD 102
Source	CSR
Decomposition point / decomposition range	
No data available	
Flash point	
Value	142 °C
Method	92/69/EEC, A.9
Source	CSR
Auto-ignition temperature	
Value	400 °C
Method	EEC A.15
Source	CSR
Oxidising properties	
not oxidizing	
Explosive properties	
The product does not have explosive properties.	
Flammability (solid, gas)	
No data available	
Lower flammability or explosive limits	
No data available	
Upper flammability or explosive limits	
No data available	
Vapour pressure	
Value	0.69 Pa
Reference temperature	25 °C
Method	OECD 104
Source	CSR
Vapour density	
No data available	
Evaporation rate	
No data available	
Relative density	
No data available	
Density	
Value	1050 kg/m ³
Reference temperature	20 °C
Method	OECD 109
Source	CSR
Solubility in water	
Value	1000 g/l
Reference temperature	20 °C
Method	OECD 105
Source	CSR
Comments	Completely miscible
Solubility(ies)	
No data available	

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Partition coefficient: n-octanol/water			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
log Pow		0.18	
Reference temperature		25 °C	
Method		OECD 107	
Source		CSR	

Viscosity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Value		6.78 mm ² /s	
Reference temperature		20 °C	
Type		kinematic	
Method		OECD 114	
Source		CSR	

9.2 Other information

Other information
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See section 7).

10.3 Possibility of hazardous reactions

No data available.

10.4 Conditions to avoid

Heat

10.5 Incompatible materials

Acids; Oxidizing agents; Reducing agents

10.6 Hazardous decomposition products

Carbon monoxide and carbon dioxide; Nitrous oxides (NOx); Toxic gases/vapours; Corrosive gases/vapours

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
LD50		930 mg/kg bodyweight	
Species		rat	
Method		OECD 401	
Source		CSR	

Acute dermal toxicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
LD50		3100 mg/kg bodyweight	
Species		rat	
Method		OECD 402	
Source		CSR	

Acute inhalational toxicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
LC50		1.34 mg/l	
Duration of exposure		4 h	
State of aggregation		Dust/mist	
Species		rat	
Method		OECD 403	
Source		CSR	

Skin corrosion/irritation			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Species		rat	

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Method	EU B.4
Source	CSR
Evaluation	corrosive

Serious eye damage/irritation
No data available

Respiratory or skin sensitisation			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Route of exposure		Skin	
Species		mouse	
Method		OECD 429	
Source		CSR	
Evaluation		sensitizing	

Germ cell mutagenicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Reproduction toxicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Source		CSR	
Evaluation/classification		Based on available data, the classification criteria are not met.	

Carcinogenicity			
No data available			

STOT - single exposure			
No data available			

STOT - repeated exposure			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Route of exposure		inhalational	
NOAEC		5	mg/m ³
Species		rat	
Target organ		lungs	
Method		OECD 413	
Source		CSR	

Aspiration hazard			
No data available			

Delayed and immediate effects as well as chronic effects from short and long-term exposure			
Strong irritating effect on the respiratory tract and the lungs.			

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish (acute)			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
LC50		87.6	mg/l
Duration of exposure		96	h
Species		Oryzias latipes	
Method		OECD 203	
Source		CSR	

Toxicity to fish (chronic)			
No data available			

Toxicity to Daphnia (acute)			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
EC50		15.2	mg/l
Duration of exposure		48	h
Species		Daphnia magna	
Method		OECD 202	
Source		CSR	

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Toxicity to Daphnia (chronic)			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
NOEC		4.7	mg/l
Duration of exposure		21	day(s)
Species	Daphnia magna		
Method	OECD 211		
Source	CSR		

Toxicity to algae (acute)			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
EC50		20.3	mg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	CSR		

Toxicity to algae (chronic)			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
NOEC		10.5	mg/l
Duration of exposure		72	h
Species	Pseudokirchneriella subcapitata		
Method	OECD 201		
Source	CSR		

Bacteria toxicity			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
EC50		>	1000 mg/l
Duration of exposure		30	min
Species	activated sludge		
Method	OECD 209		
Source	CSR		

12.2 Persistence and degradability

Biodegradability			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
Value		49	%
Duration		28	day(s)
Method	OECD 301 B		
Source	CSR		
Evaluation	not readily biodegradable		

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water			
No	Substance name	CAS no.	EC no.
1	m-phenylenebis(methylamine)	1477-55-0	216-032-5
log Pow		0.18	
Reference temperature		25	°C
Method	OECD 107		
Source	CSR		

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	
PBT assessment	The product is not considered to be a PBT.
vPvB assessment	The product is not considered to be a vPvB.

12.6 Other adverse effects

No data available.

12.7 Other information

Other information
Do not discharge product unmonitored into the environment.

SECTION 13: Disposal considerations

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13.1 Waste treatment methods

Product

Allocation of a waste code number, according to the European Waste Catalogue, should be carried out in agreement with the regional waste disposal company.

Expulsion resins should be carefully collected to cure the resin completely before disposal.

Packaging

Residuals must be removed from packaging and when emptied completely disposed of in accordance with the regulations for waste removal. Packaging with residues of the substance have to be collected and incinerated at an approved facility.

SECTION 14: Transport information

14.1 Transport ADR/RID/ADN

Class	8
Classification code	C7
Packing group	II
Hazard identification no.	80
UN number	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S.
Tunnel restriction code	E
Label	8

14.2 Transport IMDG

Class	8
Packing group	II
UN number	UN2735
Proper shipping name	AMINES, LIQUID, CORROSIVE, N.O.S.
EmS	F-A, S-B
Label	8

14.3 Transport ICAO-TI / IATA

Class	8
Packing group	II
UN number	UN2735
Proper shipping name	Amines, liquid, corrosive, n.o.s.
Label	8

14.4 Other information

No data available.

14.5 Environmental hazards

Information on environmental hazards, if relevant, please see 14.1 - 14.3.

14.6 Special precautions for user

No data available.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code

Not relevant

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations

Regulation (EC) No 1907/2006 (REACH) Annex XIV (List of substances subject to authorisation)

In accordance with the Reach regulation (EC) 1907/2006, the product does not contain any substances that are considered as subject to listing in annex XIV, inventory of substances requiring authorisation.

REACH candidate list of substances of very high concern (SVHC) for authorisation

In accordance with article 57 and article 59 of the Reach regulation (EC) 1907/2006, this substance is not considered as subject to listing in annex XIV, inventory of substances requiring authorisation ("Authorization list").

Regulation (EC) No 1907/2006 (REACH) Annex XVII: RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, PREPARATIONS AND ARTICLES

The product is considered being subject to REACH regulation (EC) 1907/2006 annexe XVII.	No 3
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Directive 2012/18/EU on the control of major-accident hazards involving dangerous substances

This substance is not subject to Part I or 2 of Annex I

15.2 Chemical safety assessment

A chemical safety assessment has been carried out for this substance.

SECTION 16: Other information

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Sources of key data used to compile the data sheet:

Regulation (EC) No 1907/2006 (REACH), 1272/2008 (CLP) as amended in each case.

EC Directives 2000/39/EC, 2006/15/EC, 2009/161/EU

National Threshold Limit Values of the corresponding countries as amended in each case.

Transport regulations according to ADR, RID, IMDG, IATA as amended in each case.

The data sources used to determine physical, toxic and ecotoxic data, are indicated directly in the corresponding chapter.

Full text of the H- and EUH- phrases drawn up in sections 2 and 3 (provided not already drawn up in these sections)

H302 Harmful if swallowed.

H332 Harmful if inhaled.

List of existing exposition scenarios

ES001 Production of epoxy resins - industrial use

ES002 Use as monomer - industrial use

ES003 Use of adhesives, coatings and composites - professional use

ES004 Use as intermediate - industrial use

ES005 Use in coatings, adhesives, sealants, and elastomers - industrial use.

ES006 Formulation and (re)packing of substance and mixtures - industrial use

Department issuing safety data sheet

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This information is based on our present knowledge and experience.

The safety data sheet describes products with a view to safety requirements.

It does not however, constitute a guarantee for any specific product properties and shall not establish a legally valid contractual relationship.

Alterations/supplements:

Alterations to the previous edition are marked in the left-hand margin.

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