SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

META Metaldehyde techn.

Version	2.4 / EN
Revision Date	22.06.2012
Print Date	30.08.2017

1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Substance name : META Metaldehyde techn.
Synonyms : 2,4,6,8-Tetramethyl-1,3,5,7-tetraoxacyclooctan

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

Use of the Substance/Mixture : Pesticide

1.3 Details of the supplier of the safety data sheet

Company : Lonza Ltd
Muenchensteinerstrasse 38
CH-4002 Basel, Switzerland
Telephone: +41 61 316 81 11

E-mail address : prodinfo@lonza.com
Responsible/issuing person

1.4 Emergency telephone number

Lonza Ltd, CH-4002 Basel, Switzerland
Telephone: +41 61 313 94 94 (24h)

2. Hazards identification

2.1 Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Flammable solids; Category 2	H228	Flammable solid.
Acute toxicity; Category 3 ; Oral	H301	Toxic if swallowed.

67/548/EEC / 1999/45/EC

Highly flammable.
Harmful if swallowed.

2.2 Label elements

Labelling according to EC Directives

REGULATION (EC) No 1272/2008

Pictogram :

Signal word : Danger

Hazard statements

H228	:	Flammable solid.
H301	:	Toxic if swallowed.

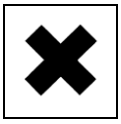
Precautionary statements

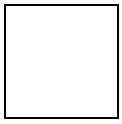
P210	:	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P301 + P310	:	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

67/548/EEC / 1999/45/EC

Index-No. : 605-005-00-7

Symbol(s) :





:

Highly flammable Harmful

R-phrase(s)

R11	:	Highly flammable.
R22	:	Harmful if swallowed.

S-phrase(s)

S 2	:	Keep out of the reach of children.
S13	:	Keep away from food, drink and animal feedingstuffs.
S16	:	Keep away from sources of ignition - No smoking.
S25	:	Avoid contact with eyes.
S46	:	If swallowed, seek medical advice immediately and show this container or label.

2.3 Other hazards

General advice : No information available.

3. Composition/information on ingredients

3.1 Substances

Substances / Mixtures	:	Substance
Synonyms	:	2,4,6,8-Tetramethyl-1,3,5,7-tetraoxacyclooctan
CAS-No.	:	108-62-3
Index-No.	:	605-005-00-7
EC-No.	:	203-600-2

Hazardous components

2,4,6,8-Tetramethyl-1,3,5,7-tetraoxacyclooctane

CAS-No.	EC-No. / Registration number	Classification	Concentration
108-62-3 (37273-91-9, 9002-91-9)	203-600-2	Flam. Sol.; 2; H228 Acute Tox.; 3; H301 F, Xn; R11, R22	> 98 %

For the full text of the H-Statements mentioned in this Section, see Section 16.
For the full text of the R-phrases mentioned in this Section, see Section 16.

4. First aid measures

4.1 Description of first aid measures

Inhalation : Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration.

Skin contact : After contact with skin, wash immediately with plenty of soap and water. Consult a physician.

Eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Call a physician immediately.

Ingestion : Call a physician immediately. Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : No information available.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : No information available.

5. Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Dry powder, Water spray, Foam

5.2 Special hazards arising from the substance or mixture

Specific hazards during firefighting : Heating or fire can release toxic gas.

5.3 Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.
Further information	:	Use water spray to cool unopened containers.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Avoid dust formation.

6.2 Environmental precautions

Environmental precautions	:	Prevent product from entering drains.

6.3 Methods and materials for containment and cleaning up

Methods for cleaning up	:	Sweep up or vacuum up spillage and collect in suitable container for disposal.Do not flush into surface water or sanitary sewer system.

6.4 Reference to other sections

Additional advice	:	For personal protection see section 8.

7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling	:	Avoid formation of respirable particles. Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin and eyes.
Advice on protection against fire and explosion	:	Flammable. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharges. Avoid dust formation.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Keep container tightly closed. To maintain product quality, do not store in heat or direct sunlight. Keep in a dry, cool and well-ventilated place.

7.3 Specific end uses

Specific use(s)	:	No information available.

8. Exposure controls/personal protection

8.1 Control parameters

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Personal protective equipment

Respiratory protection	:	In the case of dust or aerosol formation use respirator with an approved filter. Half mask with a particle filter P2 (EN 143).
Hand protection	:	Suitable material : Nitrile rubber Break through time : > 480 min Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
Eye protection	:	Safety glasses with side-shields conforming to EN166
Skin and body protection	:	Choose body protection according to the amount and concentration of the dangerous substance at the work place. No special protective equipment required.
Hygiene measures	:	Wash hands before breaks and immediately after handling the product. Avoid contact with skin, eyes and clothing.

Environmental exposure controls

General advice	:	Prevent product from entering drains.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	:	crystalline
Physical state	:	solid
Colour	:	white

Odour	:	characteristic
pH	:	6,4 - 6,6 (222 mg/l ; 20 °C)
Melting point/range	:	191 °C Method: OECD Test Guideline 102
Sublimation point	:	119 °C (984,2 hPa)
Molecular Weight	:	176,21 g/mol
Flash point	:	closed cup : 50 - 55 °C Method: Abel-Pensky c.c. DIN 51755
Flammability	:	Highly flammable Method: Flammability (solids)
Vapour pressure	:	6,6 Pa (25 °C) Method: OECD Test Guideline 104
Relative vapour density	:	6,06
Density	:	ca. 1,27 g/cm3 (20 °C)
Bulk density	:	ca. 0,65 g/cm3
Water solubility	:	0,222 g/l (22 °C) Method: OECD Test Guideline 105
Solubility(ies)	:	Hexane: 52 mg/l (21 °C) Toluene: 530 mg/l (21 °C) Methanol: 1,73 g/l (21 °C) Ether: 5 g/l (34 °C) Acetone: 1,46 g/l (20 °C) Method:OECD Test Guideline 105 Dichloromethane: 8,11 g/l (20 °C) Ethyl acetoacetate: 0,754 g/l (20 °C) 1,2-Dichloroethane: 3,08 g/l (20 °C) Method:OECD Test Guideline 105
log Pow	:	0,12 (20 °C) Method: OECD Test Guideline 107
Ignition temperature	:	> 365 °C 220 °C
Auto-flammability	:	> 400 °C Method: Relative self-ignition temperature for solids
Burning number	:	BZ 6: Very rapid combustion with flame propagation (20 °C) Method: Source of ignition: glowing platinum wire, approx. 1000°C
Explosivity	:	Explosivity (EU-regulations): Not explosive Method: EEC A.14
Surface tension	:	71,9 mN/m (19,5 °C ; 0,204 g/l)

Impact Sensitivity	:	not impact sensitive Method: Drop hammer test
Dust explosion class	:	St(H)2: strong dust explosion, indicator 2 Method: Modified Hartmann tube

9.2 Other information

no data available

10. Stability and reactivity

10.1 Reactivity

Stable under recommended storage conditions.

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Stable under normal conditions.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

No decomposition if stored normally.

11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity (LD50)	:	283 mg/kg Species: rat Method: OECD Test Guideline 401
Acute dermal toxicity (LD50)	:	> 5 000 mg/kg Species: rat Exposure time: 24 h

Skin irritation	:	non irritant Species: rabbit Exposure time: 4 h Method: OECD Test Guideline 404
Eye irritation	:	mild irritant Species: rabbit Method: OECD Test Guideline 405
Sensitisation	:	not sensitizing Species: mouse Local Lymph Node Assay Method: OECD 429 not sensitizing Species: guinea pig Buehler Test Method: OECD Test Guideline 406
Repeated dose toxicity	:	NOEL: 1 000 mg/kg Application Route: Dermal Exposure time: 21,0 d Species: rabbit Method: US-EPA NOEL: 21 mg/kg Application Route: Dietary Exposure time: 90 Days Species: rat Method: MAFF, Japan NOEL: 2,5 mg/kg Application Route: Dietary Exposure time: 104 Weeks Species: rat Method: OECD Test Guideline 453
Genotoxicity in vitro	:	negative Ames test, Salmonella typhimurium Method: OECD 471 negative Gene mutation, mouse lymphoma cells Method: OECD 476 negative Chromosome aberration test in vitro, CHO cells Method: OECD 473
Genotoxicity in vivo	:	negative Mutagenicity (micronucleus test) Species: mouse Method: OECD 474
Carcinogenicity	:	not carcinogenic Application Route: Oral Species: mouse Method: OECD Test Guideline 451

not carcinogenic
Application Route: Oral
Species: rat
Method: OECD Test Guideline 453

Reproductive toxicity	:	No toxicity to reproduction Test type: Two-generation reproductive toxicity Species: rat Application Route: Dietary Method: OECD Test Guideline 416 No toxicity to reproduction Species: rat Application Route: Dietary Method: OECD Test Guideline 415
Teratogenicity	:	not teratogenic, not embryotoxic Test type: Teratogenicity Application Route: Oral Species: rabbit Method: OECD 414 not teratogenic, not embryotoxic Test type: Teratogenicity Application Route: Oral Species: rat Method: US-EPA

12. Ecological information

12.1 Toxicity

Toxicity to fish (LC50)	:	75 mg/l Species: Oncorhynchus mykiss (rainbow trout) Acute toxicity Exposure time: 96 h Method: OECD Test Guideline 203
Toxicity to fish (NOEC)		8,9 mg/l Species: Pimephales promelas (fathead minnow) Early-life Stage Exposure time: 33 d Method: OECD 210
Toxicity to daphnia and other aquatic invertebrates (EC50)	:	> 90 mg/l Species: Daphnia magna (Water flea) Immobilization Exposure time: 48 h Method: OECD Test Guideline 202
(NOEC)		90 mg/l Species: Daphnia magna (Water flea) Reproduction Test Exposure time: 21 d Method: OECD Test Guideline 202

Toxicity to algae (EC50)	:	> 200 mg/l Species: Desmodesmus subspicatus (green algae) Growth inhibition Exposure time: 72 h Method: OECD Test Guideline 201
Toxicity to bacteria (EC50)	:	> 1 000 mg/l Species: activated sludge Respiration inhibition Exposure time: 3 h Method: OECD 209

12.2 Persistence and degradability

Biodegradability	:	Respirometer test: 2,8 % Not readily biodegradable. Testing period: 28 d Method: OECD 301 F Zahn-Wellens Test: 6 % Testing period: 28 d Method: OECD 302 B

12.3 Bioaccumulative potential

Bioaccumulation	:	Does not bioaccumulate. Bioconcentration factor (BCF): 11 Species: Lepomis macrochirus (Bluegill sunfish) Exposure time: 28 d Method: OECD 305

12.4 Mobility in soil

Behaviour in environmental compartments	:	no data available

12.5 Results of PBT and vPvB assessment

Assessment	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Additional advice	:	no data available

13. Disposal considerations

13.1 Waste treatment methods

Product	:	Dispose of in accordance with local regulations. Contact waste disposal services.
Contaminated packaging	:	Dispose of as unused product.

14. Transport information

IATA

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	Metaldehyde
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Labels	:	4.1
14.5	**Environmental hazards**	:	no

IMDG

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	Metaldehyde
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Labels	:	4.1
	EmS Number 1	:	F-A
	EmS Number 2	:	S-G
14.5	**Environmental hazards**	:	Marine pollutant: no

ADR

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	METALDEHYDE
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Classification Code	:	F1
	Hazard identification No	:	40
	Labels	:	4.1
14.5	**Environmental hazards**	:	no

RID

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	METALDEHYDE
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Classification Code	:	F1
	Hazard identification No	:	40
	Labels	:	4.1
14.5	**Environmental hazards**	:	no

DOT

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	Metaldehyde
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Labels	:	4.1
14.5	**Environmental hazards**	:	no

TDG

14.1	**UN number**	:	1332
14.2	**Proper shipping name**	:	METALDEHYDE
14.3	**Transport hazard class**	:	4.1
14.4	**Packing group**	:	III
	Labels	:	4.1
14.5	**Environmental hazards**	:	no

14.6	**Special precautions for user**	:	none
14.7	**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**	:	not applicable

15. Regulatory information

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Water contaminating class (Germany) : WGK 1: slightly water endangering

15.2 Chemical Safety Assessment

not required

16. Other information

Full text of H-Statements

H228	Flammable solid.
H301	Toxic if swallowed.

Full text of R-Phrases

R11	Highly flammable.
R22	Harmful if swallowed.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

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.