


AGRIA S.A.  4009 Plovdiv BULGARIA	SAFETY DATA SHEET According to Annex II of Regulation (EC) № 1907/2006 and Regulation (EC) № 1272/2008 [CLP]	Issue date: 01.04.2004 Edition № 6
	MANCOZEB 80 WP	Date of edition: 01.06.2017

1. IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifiers

Name of the substance : Mancozeb 800 g/kg WP
 EC № : -
 Registration № (REACH) : -
 CAS № : -

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

Identified uses : Fungicide

1.3. Details of the supplier of the safety data sheet

Manufacture/ Supplier : AGRIA S.A.
 Street/ Zip Code : Asenovgradsko shose, 4009 Plovdiv
 Phone : 032 273 500, the phone number is available only during office hours
 Fax : + 359 32 63 83 77
 E-mail : agria@agria.bg

1.4 Emergency telephone number

Available : +44 (0)800 246 1274 (dangerous goods safety advisor)
 Language telephone line : 24/7
 : English

2. HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

Classification According Regulation (EC) No 1272/2008 (CLP) : Hazardous to the aquatic environment - Acute 1
 Reproductive toxicity, hazard category 2
 Skin sensitisation, hazard category 1

2.2. Label elements

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

Hazard pictograms :



Signal words :

WARNING

Hazard statements : *H361D - Suspected of damaging the unborn child*
H317 - May cause an allergic skin reaction.
H400 - Very toxic to aquatic life.

Precautionary Statements :

P202: Do not handle until all safety precautions have been read and understood
P261: Avoid breathing fume/gas/mist/vapours/spray
P280: Wear protective gloves / protective clothing / eye protection / face protection
P302+P352: IF ON SKIN: Wash with plenty of soap and water
P308+P313: If exposed or concerned: Get medical advice/attention
P333+P313: If skin irritation or a rash occurs: Get medical advice/attention
P363: Wash contaminated clothing before reuse
P391: Collect spillage
EUH208: Contains (hexamethylenetetramine). May cause an allergic reaction
EUH401: To avoid risks to human health and the environment comply with the instructions for use

2.3. Other hazards :

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances : Refers to a mixture

3.2. Mixtures

Description of the mixture

Name	CAS No	EC No	Index No	REACH Reg.No	Concentration (%)	Classification according Regulation (EC) No 1278/2008 (CLP)
<i>Mancozeb Manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt</i>	8018-01-7	-	006-076-00-1	-	78 - 83	<i>Skin Sens. 1 – H317</i> <i>Repr. 2 – H361d</i> <i>Aquatic acute 1 – H400</i>
<i>Sodium methylene polymethylnaphthyl sulphonate</i>	1322-93-6	215-343-3	-	-	< 1	<i>Acute Tox. 4 - H332</i> <i>Acute Tox. 4 - H302</i> <i>Eye Irrit. 2 - H319</i> <i>STOT SE 3 - H335</i>
<i>Hexamethylene tetramine</i>	100-97-0	202-905-8	612-101-00-2	-	< 1	<i>Flam. Sol. 2 - H228</i> <i>Skin Sens. 1 H317</i> <i>Resp. Sens.1 - H334</i>

For full text of Hazard categories and Hazard statements: see SECTION 16.

4. FIRST AID MEASURES

4.1. Description of first aid measures

Following inhalation : Remove from exposure area to fresh air.
Provide artificial breathing if the breathing has stopped
Seek medical attention immediately.

- Following skin contact : Remove contaminated clothing and shoes.
Wash affected area with plenty of water.
Seek medical attention if necessary.
Wash contaminated clothing before next use
- Following eye contact : Immediately rinse for at least 15 minutes with large quantity of drinking water while holding eyes open.
Remove contact lenses, if present and rinse eyes with plenty of drinking water for 5 minutes. Remove contact lenses and continue rinsing for 15 more minutes. Immediately seek qualified medical advice.
- Following ingestion : Never give anything by mouth to an unconscious person!
Seek medical attention immediately. Don't induce vomiting. If the patient is conscious, rinse out mouth thoroughly and have the patient drink a glass of water.
- Self-protection of the first-aiders : No information
- 4.2. Most important symptoms and effects, both acute and delayed** : Possible manifestation of allergic symptoms such as urticaria, allergic edema. Possible changes in catarrhal mucous membrane of eyes and upper respiratory tract.

4.3. Indication of any immediate medical attention and special treatment needed

- : No specific antidote available. Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

- Suitable extinguishing media : Dry powder, carbon dioxide fire extinguishers. In case of large fires use water spray, foam extinguisher.
- Unsuitable extinguishing media : Water jet.

5.2. Special hazards arising from the substance or mixture

- Hazardous combustion products :
: In case of fire, along with other products of combustion, the smoke contains toxic gases – sulphur dioxide, nitrogen oxides, carbon monoxide and hydrogen sulphide.

5.3. Advice for firefighters

- : Full impervious coverall clothing. Self-containing breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

- For those staff which does not meet for emergency* : Remove immediately.
- For the persons responsible for emergency* : Eliminate all ignition sources (flame or spark). Provide local and general exhaust ventilation. Use protective clothing and gloves, respiratory mask with an effective particulate filter, chemical goggles for eye protection.

6.2. Environmental precautions

- : In case of accidental release take precautions to protect the surface and underground water, soil and sewage from contamination. Remove the sources of heat and flames.
In case of spill into the sewage, surface water, ground water or soil notify the competent authorities immediately.

6.3. Methods and material for containment and cleaning up

For containment and cleaning	: Absorb with an inert material – sand, zeolite. Use vacuum cleaning. Do not dispose the product and/or contaminated materials into the sewage systems, water sources or water bodies. Collect into an appropriate, labelled tightly sealed waste container. Store the container at an appropriate place for further treatment or disposal according to the national legislation.
Other information	: Not available.
6.4. <u>Reference to other sections</u>	: The collected product and/or contaminated materials should be treated as a waste according to section 13.

7. HANDLING AND STORAGE

7.1. Precautions for safe handling

Precautionary measures	: Use process enclosures, local exhaust ventilation and other suitable engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. (See section 8).
Measures to prevent fire	: Dust may form explosive mixtures with air. All the areas where accumulation of dust in dangerously high concentrations may occur have to be indicated and provided with fire extinguishing systems/tools. Keep away from sources of ignition (open flames, sparkles).
Measures to prevent aerosol and dust	: Regularly clean the premises and facilities wearing personal protective equipment and using professional fire-safe cleaning tools. Keep within the workspace only the quantities necessary for the normal working process. Containers / packaging must not be left open.
Measures for environmental protection Advice on general occupational hygiene	: No available information. : Do not eat, drink or smoke when handling the product. In case of contamination change the work clothing. Avoid inhalation, ingestion and contact with eyes and skin. Do not handle this product without wearing the recommended personal protective clothing and equipment.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures and storage conditions	: Keep in unopened original packing. Keep in cool, dry, well-ventilated place far from sources of ignition. Prevent static electricity generation. Do not allow accumulation of dust in significant concentrations. Keep out of reach of children.
Packing materials Requirements for storage rooms and vessels	: No available information. : Keep away from: <ul style="list-style-type: none"> - medicinal products, food, forage, fertilizers and seed - hazardous infectious substances, radioactive substances, explosive substances highly reactive oxidizing substances
Class of storage	: Not available
Additional information on storage conditions	: Not available

7.3. Specific end use(s)

Recommendations	: None
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8. EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limit values in air according to national (Bulgarian) legislation

Name	CAS No.	EC No.	Occupational exposure limit values in air for the chemical substances	Legal basis
Manganese ethylene bis (dithiocarbamate) (polymeric) complex with zinc salt	8018-01-7	-	8 h - 1 mg/m ³	Ordinance No. 13 on the protection of workers from risks related to exposure to chemical agents at work (Government Gazette, No. 8/2004 amended No.2/2012)
Hexamethylene tetramine	100-97-0	202-905-8	8 h - 2,0 mg/m ³	

Occupational exposure limit values in air according to EU legislation

None established

Consult the relevant national limit values currently applicable in the EU Member State/Non EU country in which this safety data sheet is being provided

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Structural, organizational and technical measures : Ensure adequate local and overall ventilation in the workplace.

8.2.2. Individual protection measures, such as personal protective equipment

Respiratory protection : In case of dust or aerosol formation use respirator with an approved filter. Half mask with a particle filter FFP2 (EN149).



Skin protection : **In case of prolonged and repeated exposure**
Wear body-covering chemical resistant protective clothing.



Eye protection : Use safety glasses with side shields (according to EN 166).



Hand protection : **In case of short term exposure:**
Single-use vinyl gloves.
In case of prolonged or frequently repeated exposure
nitrile-rubber gloves with a protection class of 5 or higher
breakthrough time > 240 minutes
thickness > 0.4 mm.



Thermal hazards : No available information.
No available information.

8.2.3. Environmental exposure controls

: Emissions from the ventilation system and working equipment should be checked for conformity with environment safety legislations.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- (a) *Appearance* : Yellow powder
Method: OPPTS 830.6303 and OPPTS 830.6302
Reference: Own GLP study – “Physical State, Appearance and Color”
- (b) *Odor* : Light sulfur
Method: OPPTS 830.6304
Reference: Own GLP study – “Physical State, Appearance and Color”
- (c) *Odor threshold* : Not available
(d) *pH* : 6.0 – 9.0 (1% solution)
Method: CIPAC MT 75.3
Reference: Own GLP study – “pH determination”
- (e) *Melting point/ Freezing point* : No available information
(f) *Initial boiling point and boiling range* : No available information
(g) *Flash point* : Did not ignite
Method: EEC A10
Reference: Own GLP study – “Flash point”
- (h) *Evaporation rate* : No available information
(i) *Flammability (solid)* : Not flammable
Method: EEC A10
Reference: Preliminary Screening Test
- (j) *Upper lower flammability or explosive limits* : No available information
(k) *Vapor pressure* : No available information
(l) *Vapor density* : No available information
(m) *Density* : Bulk density = 0.430 g/cm⁻³;
Tap density = 0.446 g/cm⁻³
Method: CIPAC MT 169
Reference: Own GLP study – “Density”
- (n) *Solubility(ies)* : The mixtures with water, ethanol and hexane showed separation of insoluble material in the two tested doses (maximum and minimum).
(o) *Partition coefficient: n-octanol/water* : No available information
(p) *Auto – ignition temperature* : 157.5 °C
Method: EEC A16
Reference: Own GLP study – “Auto – ignition temperature”
- (q) *Decomposition temperature* : No available information
(r) *Viscosity* : No available information
(s) *Explosive properties* : No evidence of Explosion risk
Method: DSC plus Reasoned case EEC A14
Reference: Own GLP study – “Explosive properties”
- (t) *Oxidizing properties* : Vigorous reaction with cellulose
Method: EEC A17
Reference: Own GLP study – “Oxidizing properties”

9.2. Other information

- Corrosion** : It is not corrosive to stainless steel;
Aluminum: 0.0313 mm / year; Copper: 0.0380 mm / year;
Iron: 0.1544 mm / year; Brass: 0.0204 mm / year

Method: OPPTS 830.6320

Reference: Own GLP study – “Corrosiveness”

10. STABILITY AND REACTIVITY

- 10.1. Reactivity** : No hazardous reactions when stored and handled according to instructions.
- 10.2. Chemical stability** : Stable under normal conditions.
- 10.3. Possibility of hazardous reactions** : Not known.
- 10.4. Conditions to avoid** : Avoid storage at temperature > 35 °C in a confined place.
Slow decomposition in presence of heat and moisture.
Prevent heating of the material to avoid thermal decomposition.
- 10.5. Incompatible materials** : Avoid contact with strong oxidants and strong acids and basis. Decomposes under alkaline and acidic conditions.
- 10.6. Hazardous decomposition products** : See section 5.

11. TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity effects based on own studies – Data on formulated product

Acute oral toxicity:

LD₅₀ > 5000 mg/kg bw (female rats)

Method: OECD 423

Reference: Own GLP study “Acute oral toxicity”

Acute dermal toxicity:

LD₅₀ > 2000 mg/kg bw (rats)

Method: OECD 402

Reference: Own GLP study “Acute dermal toxicity”

Inhalation toxicity:

LC₅₀ > 2.885 mg/L air 4h (rats)

Method: OECD 403

Reference: Own GLP study “Acute inhalation toxicity - rats”

Skin corrosion/ irritation: Non-irritant to skin in rabbits

Method: OECD 404

Reference: Own GLP study “Acute dermal irritation/ corrosion”

Serious eye damage / irritation: Non-irritant to eye in rabbits

Method: OECD 405

Reference: Own GLP study “Acute eye irritation/ corrosion”

Respiratory or skin sensitization: Non skin sensitizer to Guiney pigs

Method: OECD 406

Reference: Own GLP study “Skin sensitization test (Buehler test)”

Germ sell mutagenicity: Non mutagenic activity in Salmonella typhimurium trains

Method: OECD 471

Reference: Own GLP study “Evaluation of the Mutagenic Potential by Reverse Mutation Assay in Salmonella typhimurium (Ames Test)”

- Carcinogenicity : Not classified as a carcinogen
- Reproductive toxicity : Classified as toxic for reproduction Category 2
- STOT – single exposure : Not available
- STOT – repeated exposure : Not available
- Aspiration hazards : Not available

12. ECOLOGICAL INFORMATION

12.1. Toxicity – Data on formulated product

Acute toxicity for aquatic organism

Waterflea (*Daphnia magna*): EC₅₀ = 1.8 mg/l (24 h)
EC₅₀ = 1.38 mg/l (48 h)

Waterflea (*Daphnia magna*): NOEC = 0.1 mg/l (48 h);
LOEC = 0.2 mg/l

Method: EC C.2 and OECD 202

Reference: Own GLP study “Acute immobilisation study”

Algae (*Pseudokirchneriella subcapitata*): E_rC₅₀ 0.1029 mg/l (72 h)
E_yC₅₀ 0.0476 mg/l (72 h)

Algae (*Pseudokirchneriella subcapitata*): NOEC = 0.01 mg/l (72 h)
LOEC = 0.05 mg/l

Method: EC C.3 and OECD 201

Reference: Own GLP study “Alga growth inhibition test”

Toxicity for birds: LD₅₀ > 2000 mg/kg/day (*Japanese quail*)

Method: OECD 223

Reference: Own GLP study “Acute oral toxicity – Japanese quail”

Toxicity for fish: LC₅₀ (*Danio rerio*): 3.3 mg/l (96 h).

Method: OECD 203

Reference: Own GLP study “Acute toxicity to fish”

Toxicity for honeybees: LD₅₀ (*Apis mellifera*) > 100 µg/bee.

Method: EC C.8 and OECD 214

Reference: Own GLP study “Acute toxicity study”

Toxicity for earthworms: LD₅₀ (*Eisenia foetida*) > 1000 mg/kg

Method: EC C.8 and OECD 207 + OECD 222

Reference: Own GLP study “Acute toxicity study - earthworms”

Effects on soil micro-organisms: No long-term effect on carbon or nitrogen transformation in the two types of soils evaluated

Method: OECD 216 + 217

Reference: Own GLP study – Effects on soil micro - organisms: Carbon and Nitrogen transformation test”

12.2. Persistence and degradability

: For Mancozeb

- water – rapidly hydrolyzed with a half-life < 2 days
- soils – readily degradable, DT₅₀ soil – 6-15

12.3. Bioaccumulative potential

: For Mancozeb

Biodegradable - LogKow – 1.33 ; Log BCF – 0.32

12.4. Mobility in soil

: For Mancozeb

Low to moderate potential of mobility in soil – Log K_{oc}>3.3

12.5. Results of PBT and vPvB assessment

: The product does not contain any PBT or vPvB substance.

12.6. Other adverse effects

: Not known.

12.7. Additional information

: Not available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

: **Disposal must be carried out** in accordance with the provisions of the national legislation, in an environmentally safe manner.

Recommended treatment method: burning in appropriately licensed incinerators.

Collection of small product quantities:

Store in solid waste containers.

The container should be clearly labelled, with content description, danger indication symbols, R- and S- phrases. Store in well ventilated areas, until deposit to a licensed waste disposal company. The water used for contaminated surface washing should be collected for further treatment.

Do not reuse the empty containers for any other purpose.

Do not dispose into the sewage. Do not pollute natural water sources.

Waste code:

: 07 04 13* solid waste, containing dangerous substances
07 04 01* aqueous washing liquid and mother liquors

Waste code, packaging:

: 15 01 10* packaging containing residues of or contaminated by dangerous substances

14. TRANSPORT INFORMATION

14.1. General information

UN-No. (ADR)

: 3077

UN proper shipping name

: Environmentally hazardous substance, solid, n.o.s (mancozeb)

Transport hazard class(es)

: 9

Packing group

: III

Environmental hazards

: **Environmentally hazardous substance indication**

ADR/RID/ IMDG-Code/ICAO-TI /IATA-DGR : yes / no

Marine pollutant: yes / no

Marking



Special precautions for user

: See sections 6-8.

15. REGULATORY INFORMATION

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

EU Legislations:

EC Regulation 1107/2009 of the European Parliament and of the Council of 21 October 2009 concerning the placing of plant protection products and repealing Directives 79/117/EEC and 91/414/EEC
Applicable

REGULATION (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labelling and packing of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.
Applicable

REGULATION (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemical Agency, amending Directive 1999/45/EC and repealing Council regulation (EEC) No 793/93 and Commission regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC, including amendments.
No restrictions

94/33/EIO Directive of 22 June 1994 on the protection of young people at work
Applicable

National Legislation:

Ordinance on prevention of major accidents involving hazardous substances and limiting their consequences.
Applicable

Ordinance for authorization of plant protection products.
Applicable

Ordinance on procedures for labelling of plant protection products.
Applicable

Ordinance No.7 on harmful and serious work prohibited for women.
Applicable

Ordinance No.6 of 24 July 2006 on procedures for granting work permits to persons less than 18 years.
Applicable

15.2 Chemical safety assessment : The chemical safety assessment has been carried out for the mixture

16. OTHER INFORMATION

(i) Indication of changes

The information in this safety data sheet was changed in the following sections:

- 2 – Hazard Identification
- 3 – Composition/Information of ingredients
- 15 – Regulatory information

(ii) Abbreviation and acronyms
None

(iii) Key literature references and sources for data
ECHA Guidance on the compilation of safety data sheets (*version 2.1, February 2014*)

(iv) Classification according to Directive 1999/45/EC, Full text of R – phrases
Xn, Repr. Cat. 3 – Harmful, Reproductive toxicity Category 3;
R 63 – Possible risk of harm to the unborn child
R 43 - May cause sensitisation by skin contact
N:R 50 – Dangerous to the environment; Very toxic to aquatic organism

(v) Classification and procedure used to derive the classification for mixtures to Regulation (EC) 1272/2008 [CLP]

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
<i>Repr. 2</i>	Calculation method
<i>Skin Sens. 1</i>	On basis of test data
<i>Aquatic Acute 1</i>	On basis of test data

(vi) Relevant H – statements (number and full text)

According Regulation (EC) №1272/2008

Repr. 2 – Toxic for reproduction, categories of danger 2;
H361d Suspected of damaging the unborn child.
Skin sens. 1 - Skin sensitization, categories of danger 1;
H317 May cause an allergic skin reaction.
Eye irrit. 1 - Serious eye damage / eye irritation, categories of danger 1
H318 Causes serious eye damage.
Flam. Sol. 2 - Flammable solid, categories of danger 2;
H228 Flammable solid.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled
Aquatic acute 1 - Hazardous to the aquatic environment, categories of danger 1;
H400 Very toxic to aquatic life.
Acute tox. 4 – Acute toxicity, categories of danger 4;
H302 - Harmful if swallowed.
H332 - Harmful if inhaled.
Eye irrit. 2 – Serious eye irritation, categories of danger 2;
H319 – Causes serious eye irritation
STOT (SE) 3 – Specific target organ toxicity (single exposure), categories of danger 3;
H335 – May cause respiratory irritation.
Flam. Sol. 2 – Flammable solid, categories of danger 3;
H228 – Flammable solid
Skin sens. 1 – Skin sensitization, categories of danger 1;
H317 – May cause an allergic skin reaction.
Resp. Sens. 1 – Respiratory sensitization, hazard category 1;
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.

(vii) Training advice

General occupational hygiene training recommended

(viii) Further information

THE INFORMATION PRESENTED IN THIS SDS IS BASED ON OUR KNOWLEDGE OF THE PRODUCT AT THE DATE OF ISSUE. THE SAFETY DATA SHEET COMPLEMENTS THE TECHNICAL SPECIFICATION/ LABEL/ LEAFLET OF THE PRODUCT, BUT DOES NOT REPLACE THEM.