


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
	FORTUNA GLOBE	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 750 g/kg WDG

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)
 : 24/7
 Language telephone line : English

2. HAZARD IDENTIFICATION

2.1. Classification of the substance or mixture

Classification According Regulation (EC) No 1272/2008 (CLP)
 : Skin Sens. 1; H317
 Repr. 2; H361d
 Aquatic Acute 1; H400

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 :

Prevention

P280 – Wear protective gloves/ protective clothing/ face protection
P273 – Avoid release to the environment

Response

P302 + P352 – IF ON SKIN: Wash with plenty of soap and water
P308 + P313 – IF exposed or concerned: Get medical advice/ attention
P391 – Collect spillage

Disposal

P501 – Dispose of contents/ container in accordance to national regulations

EUH 401 – To avoid risks to human health and the environment, comply with the instruction for use

SP1 – Do not contaminate water with the product or its container (Do not clean application equipment near surface water/ Avoid contamination via drains from farmyards and roads)

SPe3 – To protect aquatic organisms respect an unsprayed buffer zone of 10 meters to surface water bodies

2.3. Other hazards : Contains hexamethylene tetramine. May cause allergic reaction.

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 (% w/w)	Classification according Regulation (EC) No 1272/2008 (CLP)
Mancozeb, Manganese ethylenebis(dithiocarbamate) (polymeric) complex with zinc salt	8018-01-7	-	006-076-00-1	-	75 ± 2.5	Skin Sens. 1; H317 Repr. 2; H361d Aquatic Acute 1; H400
Sodium diisopropyl naphthalene sulphonate	1322-93-6	215-343-3	-	-	< 1	Acute Tox. 4; H332 Acute Tox. 4; H302 Eye Irrit. 2; H319 STOT SE 3; H335
Hexamethylene tetramine	100-97-0	202-905-8	612-101-00-2	-	< 1	Flam. Sol. 2; H228 Skin Sens. 1; H317 Resp. Sens. 1; H334

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

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. Reference to other sections

- : 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

- : No available information.

Requirements for storage rooms and vessels

- : Keep away from:
 - medicinal products, food, forage, fertilizers and seed
 - hazardous infectious substances, radioactive substances, explosive substanceshighly reactive oxidizing substances

Class of storage : Not available
Additional information on storage conditions : Not available

7.3. Specific end use(s)

Recommendations : None

8. EXPOSURE CONTROL/ PERSONAL PROTECTION

8.1. Control parameters

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

Name	CAS №	EC №	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 – 1.0 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 clothing covering the skin, resistant to penetration of the material.



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 granules

Method: Observation of color, granule integrity, physical state, odour

Reference: Own GLP study – “Physical State, Appearance and Color”

(b) *Odor* : Characteristic

Method: Observation of color, granule integrity, physical state, odour

Reference: Own GLP study – “Physical State, Appearance and Color”

(c) *Odor threshold* : Not available

(d) *pH* : 6.0 – 7.5 (1% water solution)

Method: CIPAC MT 75.3

Reference: Own GLP study – “pH determination”

(e) *Melting point/ Freezing point* : Not available

(f) *Initial boiling point and boiling range* : Not available

(g) *Flash point* : Did not ignite

Method: EEC A10

Reference: Own GLP study – “Flash point”

(h) *Evaporation rate* : Not available

(i) *Flammability (solid)* : Not flammable

Method: EEC A10

Reference: Preliminary screening test

(j) *Upper lower flammability or explosive limits* : Not available

(k) *Vapor pressure* : Not available

(l) *Vapor density* : Not available

(m) *Density* : Pour density = 0.644 g/cm³
Tap density = 0.682 g/cm³

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* : Not available

(p) *Auto – ignition temperature* : 161.8 °C

(q) *Decomposition temperature* : Not available

(r) *Viscosity* : Not applicable

(s) *Explosive properties* : No evidence of Explosion risk

Method: DSC plus Reasoned case EEC A14
Reference: Own GLP study – “*Explosive properties*”

(t) *Oxidizing properties* : Not oxidizing
Method: EEC A17
Reference: Own GLP study – “*Oxidizing properties*”

9.2. Other information

Corrosion : Stainless steel = 0.0004 mm year⁻¹
Aluminum = 0.0025 mm year⁻¹
Copper = 0.0114 mm year⁻¹
Iron = 0.0638 mm year⁻¹
Brass = 0.0135 mm year⁻¹

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 > 4.835 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 carcinogenic
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 = 1.09 mg/l (24 h)
EC₅₀ = 0.54 mg/l (48 h)

Waterflea (*Daphnia magna*): NOEC = 0.1 mg/l (48 h);
LOEC = 0.3 mg/l

Method: OECD 202

Reference: Own GLP study "Acute immobilisation study"

Algae (*Pseudokirchneriella subcapitata*): E_bC₅₀ 0.80 mg/l (72 h) – for growth inhibition
E_rC₅₀ 1.73 mg/l (72 h) – for growth rate reduction

Algae (*Pseudokirchneriella subcapitata*): NOEC = 0.01 mg/l (72 h)
LOEC = 0.02 mg/l

Method: 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*): 2.46 mg/l (96 h).
LOAEL = 4 mg/l (96 h)

Method: OECD 203

Reference: Own GLP study "Acute toxicity to fish"

Toxicity for honeybees: contact LD₅₀ (*Apis mellifera*) > 133 µg/bee (48 h)

Method: OECD 214

Reference: Own GLP study "Acute contact toxicity study"

Toxicity for earthworms: LD₅₀ (*Eisenia foetida*) > 1000 mg/kg (14 days)

Method: OECD 207

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, H- and P-statements. 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 11* sludges from on-site effluent treatment 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 (contains mancozeb)
- Transport hazard class(es) : 9
- Packing group : III
- Environmental hazards : **Environmentally hazardous substance indication**
 ADR/RID/ IMDG-Code/ICAO-TI /IATA-DGR: **x yes** / no
 Marine pollutant: **x 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/EEO Directive of 22 June 1994 on the protection of young people at work
Applicable

DIRECTIVE 2012/18/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 4 July 2012 on the control of major-accident hazards involving dangerous substances, amending and subsequently repealing Council Directive 96/82/EC

This product is classified under the Seveso III Directive

Seveso III Directive
E1: Hazardous to the aquatic environment – Acute 1

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

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

Classification according to Regulation (EC) № 1272/2008	Classification procedure
<i>Repr. 2; H361d</i>	Calculation method
<i>Skin Sens. 1; H317</i>	On basis of test data
<i>Aquatic Acute 1; H400</i>	On basis of test data

- (v) **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
Flam. Sol. 2 – Flammable solid, categories of danger 2; **H228** Flammable solid
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
Acute Tox. 4 – Acute toxicity, categories of danger 4; **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
Resp. Sens. 1 – Respiratory sensitization, hazard category 1; **H334** May cause allergy or asthma symptoms or breathing difficulties if inhaled

- (vi) **Training advice**
General occupational hygiene training recommended
- (vii) **Further information**

THE INFORMATION PRESENTED IN THIS SAFETY DATA SHEET IS BASED ON OUR KNOWLEDGE OF THE PRODUCT AT THE DATE OF ISSUE AND IS INTENDED TO PROVIDE ONLY GENERAL HEALTH AND SAFETY GUIDANCE.

THIS SAFETY DATA SHEET COMPLEMENTS THE TECHNICAL SPECIFICATION / LABEL / LEAFLET OF THE PRODUCT BUT DOES NOT REPLACE THEM.

THE USERS OF THIS PRODUCT SHOULD MAKE THEIR OWN ASSESSMENT OF ITS SUITABILITY FOR THE INTENDED PURPOSES PRIOR TO USE.

NO LIABILITY WILL BE ACCEPTED FOR ANY INJURY, LOSS OR DAMAGE RESULTING FROM ANY FAILURE TO TAKE ACCOUNT OF INFORMATION OR ADVICE CONTAINED IN THIS SAFETY DATA SHEET OR OTHER AVAILABLE TECHNICAL USAGE LITERATURE.