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| 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 № 4 Date of edition: 05.01.2015 |
| | RIVAL | |

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

1.1. Product identifiers

Name of the substance : RIVAL - PROPAMOCARB HCl 722 g/l SL
 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) : Not classified as dangerous

2.2. Label elements

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

Hazard pictograms : Not available
 Signal words : Not available
Hazard statements : Not available

Precautionary Statements

- : **P102** – Keep out of reach of children
- EUH208** – Contains (propamocarb hydrochloride). May cause an allergic reaction
- EUH208** – Contains (1,2-benzisothiazol-3(2H)). May cause an allergic reaction
- EUH210** – Safety data sheet available on request.
- EUH401** – To avoid risks to human health and the environmental, comply with the instructions for use.

2.3. Other hazards

: Not known

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

: Refers to 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>Propamocarb Hydrochloride (ISO); Propyl – 3-(dimethylamino)-propyl carbamate monohydrochloride</i> | 25606-41-1 | 247-125-9 | - | - | Min. 66,5 | <i>Acute Tox.4; H302 Skin Sens. 1; H317 Aquatic Chronic 3; H412</i> |
| <i>Tensiofix DP 400</i> | - | - | - | - | 4.6 | <i>Skin Irrit.2; H315 Eye Irrit.2; H319 Skin Sens.1; H317</i> |
| <i>Ethylene glycol</i> | 107-21-1 | 203-473-3 | 603-027-00-1 | 01-211945 6816-28-0001 | 1.8 | <i>Acute Tox.4; H302 STOT RE 2; H373</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 : Immediately move to fresh air and rest. Seek medical advice immediately if breathing is difficult.
- Following skin contact : In case of contact, immediately wash affected area with soap and water. Seek medical advice if necessary. Wash contaminated clothing before reuse.
- Following eye contact : Hold eyes open and rinse with large quantity of water for at least 15 minutes. Seek medical advice if irritation persists.
- Following ingestion : Call a poison control center or doctor immediately for treatment advice. Do not induce vomiting.
- Self-protection of the first-aiders : Use PPE

4.2. Most important symptoms and effects, both acute and delayed

: Not known

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

: Treat symptomatically

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

Suitable extinguishing media

: Soft stream water fog, foam, carbon dioxide, dry chemical.

Unsuitable extinguishing media

: Water jet

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

: If involved in a fire, may evolve oxides of nitrogen, HCl, carbon dioxide and carbon monoxide. Do not breathe fumes.

5.3. Advice for firefighters

: Full protective clothing and self contained breathing apparatus

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

For those staff which does not meet for emergency

: Keep unnecessary personnel away.

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.

Measures to prevent fire

: 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 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. 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 for environmental protection : No available information
 Advice on general occupational hygiene : 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 : Use process enclosures, local exhaust ventilation and other suitable engineering controls to keep airborne levels below recommended exposure limits.
- Packing materials : If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit. (See section 8).
- Requirements for storage rooms and vessels : 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. 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).
- Class of storage : No available information
 Additional information on storage conditions : 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.

7.3. Specific end use(s)

- Recommendations : See point 7.1, 7.2 and the label/leaflet for relevant uses of this product.

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 |
|-----------------|---------------------|---|--|
| Ethylene glycol | 107-21-1/ 203-473-3 | 8 h - 52 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) |

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 mist 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
Use of nitrile-rubber gloves for multiple use with accordance with EN 374. Thickness > 0.4mm. If wearing up change the gloves.



Thermal hazards

: 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

: Clear pale yellow liquid

Method: Observation of color, physical state, odour
Reference: Own GLP study – “Physical State, Appearance and Color”

(b) *Odor* : Aromatic fruity odor

Method: Observation of colour, physical state, odour
Reference: Own GLP study – “Physical State, Appearance and Color”

(c) *Odor threshold* : Not available

(d) *pH* : 3.0 – 6.0

Method: CIPAC MT 75
Reference: Own GLP study – “pH determination”

(e) *Melting point/ Freezing point* : 64.2 °C (for propamocarb hydrochloride)

(f) *Initial boiling point and boiling range* : Decomposes before boiling

(g) *Flash point* : Not flammable

Method: EEC A9
Reference: Own GLP study – “Flash point”

(h) *Evaporation rate* : Not available

(i) *Flammability (solid, gas)* : Not applicable

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

(k) *Vapor pressure* : 8.70×10^{-01} (for propamocarb hydrochloride)

(l) *Vapor density* : No available information

(m) *Density* : 1.085 g/ml

Method: CIPAC MT 3.2
Reference: Own GLP study – “Determination of relative density”

(n) *Solubility(ies)* :

(o) *Partition coefficient: n-octanol/water* : Log Pow = - 1.3 at pH 7, 20 °C (for propamocarb hydrochloride)

(p) *Auto – ignition temperature* : No flash was observed below 400 °C

Method: EEC A15
Reference: Own GLP study – “Auto – ignition temperature”

(q) *Decomposition temperature* : 150 °C (for propamocarb hydrochloride)

(r) *Viscosity* : 64.8 mPas at 20 °C
26.7 mPas at 40 °C

Method: OECD 114
Reference: Own GLP study – “Determination of Viscosity”

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

Method: EEC A14
Reference: Own GLP study – “Explosive properties”

(t) *Oxidizing properties* : No evidence of oxidation risk

Method: EEC A17
Reference: Own GLP study – “Oxidizing properties”

9.2. Other information

Corrosion : No available information

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. Prevent heating of the material to avoid thermal decomposition.
- 10.5. Incompatible materials** : Avoid contact with strong oxidants and strong acids and bases. 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 in rats:

LD₅₀ = 5000 mg/kg bw (Rattus norvegicus)

Method: OECD 423

Reference: Own GLP study "Acute oral toxicity"

Acute dermal toxicity in rats:

LD₅₀ > 2000 mg/kg bw (Rattus norvegicus)

Method: OECD 402

Reference: Own GLP study "Acute dermal toxicity"

Inhalation toxicity in rats:

LC₅₀ > 5.212 mg/L air (Rattus norvegicus)

Method: OECD 403

Reference: Own GLP study "Acute inhalation toxicity"

Skin corrosion/ irritation: Not classified as skin irritant

Method: OECD 404

Reference: Own GLP study "Acute Dermal Irritation/Corrosion"

Serious eye damage / irritation: Not classified as an eye irritant

Method: OECD 405

Reference: Own GLP study "Acute Eye Irritation/Corrosion"

Respiratory or skin sensitization: Not classified as positive

Method: OECD 406

Reference: Own GLP study "Skin sensitization"

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|--------------------------|--|
| Germ sell mutagenicity | : Not mutagenic activity |
| Carcinogenicity | : Not classified as carcinogenic |
| Reproductive toxicity | : Not classified as toxic for reproduction |
| STOT – single exposure | : No available information |
| STOT – repeated exposure | : No available information |
| Aspiration hazards | : Not known |

12. ECOLOGICAL INFORMATION

12.1. Toxicity effects based on own studies:

Data on formulated product

Waterflea (*Daphnia magna*): EC₅₀ > 100 mg/L

Method: OECD 202

Reference: Own GLP study "Acute immobilisation study in *Daphnia magna*"

Algae (*Pseudokirchneriella subcapitata*): Does not inhibit the growth of alga up to 100 mg/L of alga media

Method: OECD 201

Reference: Own GLP study "Alga growth inhibition test"

Birds: LD₅₀ > 2000 mg/kg (*Japanese quail*)
Method: OECD 223
Reference: Own GLP study "Acute oral toxicity study of Japanese quail"

Fish (*Rainbow trout*): 96h LC₅₀ > 100 mg a.i./L
Method: OECD 203
Reference: Own GLP study "Acute oral toxicity study of Rainbow trout"

Honeybees, oral: Meets the specified range, LD₅₀ > 177.9 µg/bee or 100 µg a.i./bee
Method: OECD 213
Reference: Own GLP study "Acute toxicity study in honey bees"

Honeybees, contact: Meets the specified range, LD₅₀ > 177.9 µg/bee or 100 µg a.i./bee
Method: OECD 214
Reference: Own GLP study "Acute toxicity study in honey bees"

Earthworms (*Eisenia foetida*): NOEC: 1578.1 mg/kg
LOEC: 2809.0 mg/kg
Acute toxicity (14 day) LC₅₀=3672.17 mg/kg
Method: OECD 207
Reference: Own GLP study "Acute toxicity study in earthworms"

- 12.2. Persistence and degradability** : Propamocarb hydrochloride does not persist in soil and is rapidly mineralized.
DT₅₀ - 10 – 27 days
- 12.3. Bioaccumulative potential** : Low
- 12.4. Mobility in soil** : Low mobility in soil
- 12.5. Results of PBT and vPvB assessment** : The product does not contain any PBT or vPvB substances
- 12.6. Other adverse effects** : Not known
- 12.7. Additional information** : No additional information

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.
- Washing products** : Do not dispose into the sewage. Do not pollute natural water sources. Remove washing waters by sprinkle treating part.
- 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 | : | Not classified as dangerous in the meaning of transport regulations. |
| UN-No. (ADR) | : | Not available |
| UN proper shipping name | : | Not available |
| Transport hazard class(es) | : | Not available |
| Packing group | : | Not available |
| Environmental hazards | : | Not available |
| Marking | : | Not available |
| Special precautions for user | : | Not available |

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

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

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 and procedure used to derive the classification for mixtures to Regulation (EC) 1272/2008 [CLP]**
Not classified as dangerous

(v) **Relevant H – statements (number and full text)**

According Regulation (EC) №1272/2008

Acute Tox.4 – Acute toxicity, categories of danger 4; H302 *Harmful if swallowed*

Skin Sens.1 – Skin sensitisation, category of danger 1; H317 *May cause an allergic skin*

Aquatic Chronic 3 – Hazardous to the aquatic environment – chronic, categories of danger 3; H412 *Harmful to aquatic life with long lasting effects*

Skin Irrit.2 – Skin irritation, categories of danger 2; H315 *Causes skin irritation*

Eye Irrit.2 – Serious eye damage/eye irritation, category of danger 2; H319 *Causes serious eye irritation*

STOT RE 2 – Specific target organ toxicity – repeated exposure, categories of danger 2; H373 *May cause damage to organs through prolonged or repeated exposure*

- (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.