



SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) Annex II

Powertwin

Revision Date 03-Jan-2021

Version 2

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AG-EP1-400 SC / new ADM.02651.H.2.A
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Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Powertwin

Synonyms

Ethofumesate 200 Phenmedipham 200 SC

Pure substance/mixture

Mixture

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

Recommended Use

Herbicide; Professional use

Uses advised against

No information available

1.3. Details of the supplier of the safety data sheet

Supplier Address

ADAMA Agricultural Solutions UK Ltd
Third Floor East
1410 Arlington Business Park
Theale
READING
RG7 4SA
Tel: 01635 860555
Fax: 01635 861555

For further information, please contact

Email address

ukenquiries@adama.com

1.4. Emergency telephone number

Emergency Telephone

National Chemical Emergency Centre (UK):
Tel: 01865 407333 (24 hours)

Section 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Skin sensitization

Category 1 - (H317)

Hazardous to the Aquatic

Category 1 - (H410)

Environment - Chronic Hazard

2.2. Label elements

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

Hazard pictograms



Signal word

Warning

Hazard Statements

H317 - May cause an allergic skin reaction
H410 - Very toxic to aquatic life with long lasting effects

Precautionary Statements

P102 - Keep out of reach of children
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P501 - Dispose of contents/ container to an approved waste disposal plant

EU Specific Hazard Statements

EUH401 - To avoid risks to human health and the environment, comply with the instructions for use

Additional phrases for PPP

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).

2.3. Other hazards

No information available

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixture

| Chemical Name | Weight-% | CAS No | EC No | Index No | Classification according to Regulation (EC) No. 1272/2008 [CLP] | M-Factor | REACH Registration Number |
|---|----------|------------|-----------|--------------|---|--------------|---------------------------|
| Ethofumesate | 16-20 | 26225-79-6 | 247-525-3 | 607-314-00-2 | Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) | M=1 M=1 | - |
| Phenmedipham | 16-20 | 13684-63-4 | 237-199-0 | 616-106-00-0 | Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) | M=10 M=10 | - |
| 2,4,6-Tris(1-phenylethyl)polyoxyethylenated phosphates | 1-3 | 90093-37-1 | - | - | Eye Irrit. 2 (H319) | | - |
| Poly(oxy-1,2-ethanediy l), .alpha.-[tris(1-phenylethyl)phenyl]-.omega.-hydroxy- | 1-3 | 99734-09-5 | - | - | Aquatic Chronic 3 (H412) | | - |
| 1,2-Benzisothiazolin-3-one | <0.05 | 2634-33-5 | 220-120-9 | 613-088-00-6 | Skin Irrit. 2 (H315) Eye Dam. 1 (H318) Skin Sens. 1 (H317) Acute Tox. 4 (H302) Aquatic Acute 1 (H400) | | 01-2120761540-60-XXXX |

Full text of H- and EUH-phrases: see section 16

Section 4: FIRST AID MEASURES

4.1. Description of first aid measures

| | |
|---|---|
| General advice | In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). First aider: Pay attention to self-protection!. |
| Inhalation | Call a physician or poison control center immediately. Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. |
| Skin Contact | Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if necessary. |
| Eye contact | Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician. |
| Ingestion | Rinse mouth. Drink plenty of water. Immediate medical attention is required. |
| Self-protection of the first aider | Use personal protective equipment as required. |

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

Symptoms None known.

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

Note to physicians Treat symptomatically.

Section 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

No information available.

5.2. Special hazards arising from the substance or mixture

No specific hazard known.

5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus
In the event of fire and/or explosion do not breathe fumes.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Use personal protective equipment as required. Avoid contact with eyes and skin.

For emergency responders

Use personal protection recommended in Section 8.

6.2. Environmental precautions

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system.

6.3. Methods and material for containment and cleaning up

Take up mechanically, placing in appropriate containers for disposal.

6.4. Reference to other sections

Other Information

See also section 8,13

Section 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

Advice on safe handling

Use personal protective equipment as required. Use only with adequate ventilation.

General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Keep out of the reach of children. Keep container tightly closed. Keep containers tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s)

Risk Management Methods (RMM)

The information required is contained in this Material Safety Data Sheet.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

8.2. Exposure controls

Engineering Controls

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye/face protection

Tight sealing safety goggles.

Hand Protection

Suitable chemical resistant gloves (EN 374) also with prolonged, direct contact (recommendation: protection index 6, corresponding > 480 minutes Permeability time (permeation) according to EN 374): e.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm).

Body Protection

Use suitable protective clothing and equipment if required, such as safety goggles certified to EN 166, gloves certified to EN 374, protective boots certified to EN 13832, and/or a water repellent woven coverall with 65% polyester and 35 % cotton.

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

General Hygiene Considerations

When using do not eat, drink or smoke. Wash contaminated clothing before reuse.

Environmental exposure controls

Do not allow into any sewer, on the ground or into any body of water.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

| <u>Property</u> | <u>Values</u> | <u>Method</u> | <u>Remarks</u> |
|---|------------------------------|----------------|-------------------------------------|
| Appearance | | | |
| Physical state | : liquid | | |
| Color | : white | | |
| Odor | : characteristic | | |
| Odor threshold | : No data available | | |
| pH | : 3.8-4.8 | CIPAC MT 75 | |
| Melting point/freezing point °C | : ---- | | Not Applicable |
| Boiling point/boiling range °C | : ---- | | Not Applicable |
| Flash point °C | : > 102 | EEC A.9 | |
| Evaporation rate | : Not Applicable | | |
| Flammability (solid, gas) | : Not applicable for liquids | | |
| Upper/lower flammability or explosive limits | : No data available | | |
| Vapor pressure kPa | : ---- | | Not Applicable |
| Vapor density | : No data available | | |
| Relative density | : 1.062-1.162 | CIPAC MT 3.3.2 | 20 °C |
| Solubility(ies) mg/l | : ---- | | Not Applicable |
| Partition Coefficient (n-octanol/water) Log Pow | : | | See Section 12 for more information |
| Autoignition temperature °C | : 495 | EEC A.15 | |
| Decomposition temperature °C | : ---- | | No data available |
| Kinematic viscosity mm ² /s 40 °C | : 100 | | |
| Explosive properties | : Not an explosive | | |
| Oxidizing properties | : Not oxidizing | | |

9.2. Other information

| | | | |
|----------------------|--------|--|-------------------|
| Bulk density g/ml | : ---- | | Not Applicable |
| Surface tension mN/m | : ---- | | No data available |
| No data available | | | |

Section 10: STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

None under normal processing.

10.4. Conditions to avoid

Heat, flames and sparks.

10.5. Incompatible materials

No information available

10.6. Hazardous decomposition products

None under normal use conditions.

Section 11: TOXICOLOGY INFORMATION

11.1. Information on toxicological effects**Acute toxicity**

| | <u>Values</u> | <u>Species</u> | <u>Method</u> | <u>Remarks</u> |
|--|------------------------------|----------------|---------------|----------------------------------|
| Oral LD50 mg/kg | : > 5000 | Rat | OECD 423 | |
| Dermal LD50 mg/kg | : > 2000 | Rat | OECD 402 | |
| Inhalation LC50 mg/l/4h | : 0.725 | Rat | OECD 403 | Maximum attainable concentration |
| Skin corrosion/irritation | : Non-irritating to the skin | Rabbit | OECD 404 | |
| Serious eye damage/eye irritation | : Not irritating to eyes | Rabbit | | |
| Respiratory/skin sensitization | : Skin sensitizer | Guinea pig | OECD 406 | |

Chronic toxicity**Germ cell mutagenicity**

| <u>Chemical Name</u> | |
|----------------------|------------------|
| Ethofumesate | : Not classified |
| Phenmedipham | : Not classified |

Carcinogenicity

| <u>Chemical Name</u> | |
|----------------------|--------------------|
| Ethofumesate | : Not Carcinogenic |
| Phenmedipham | : Not Carcinogenic |

Reproductive toxicity

| <u>Chemical Name</u> | |
|----------------------|---|
| Ethofumesate | : Not toxic for the reproductive system |
| Phenmedipham | : Not toxic for the reproductive system |

STOT - single exposure

| <u>Chemical Name</u> | |
|----------------------|------------------|
| Ethofumesate | : Not classified |
| Phenmedipham | : Not classified |

STOT - repeated exposure

| <u>Chemical Name</u> | |
|----------------------|------------------|
| Ethofumesate | : Not classified |
| Phenmedipham | : Not classified |

Aspiration hazard

| <u>Chemical Name</u> | |
|----------------------|------------------|
| Ethofumesate | : Not classified |
| Phenmedipham | : Not classified |

Section 12: ECOLOGICAL INFORMATION**12.1. Toxicity****Aquatic toxicity**

| | <u>Values</u> | <u>Species</u> | <u>Method</u> | <u>Remarks</u> |
|---------------------------------|---------------------|----------------|---------------|-------------------|
| Acute toxicity | | | | |
| Fish 96-hour LC50 mg/l | : 21.9 | Rainbow trout | OECD 203 | |
| Crustacea 48-hour EC50 mg/l | : 5.97 | Daphnia magna | OECD 202 | |
| Algae 72-hour EC50 mg/l | : 1.78 | D. Subspicatus | OECD 201 | |
| Other plants EC50 mg/l | : ---- | | | No data available |
| Chronic aquatic toxicity | | | | |
| Fish NOEC mg/l | : No data available | | | |

Crustacea NOEC mg/l : No data available
 Algae NOEC mg/l : No data available
 Other plants NOEC mg/l : No data available

Terrestrial Toxicity

Birds Oral LD50 mg/kg

Chemical Name

Ethofumesate : > 2000 A. platyrhynchos OECD 401 .?
 Phenmedipham : > 2500 Mallard duck OECD 401

Bees Oral LD50 µg/bee

Chemical Name

Ethofumesate : > 50 Apis mellifera OECD 213
 Phenmedipham : > 100 OECD 213

12.2. Persistence and degradability

Abiotic Degradation

Water DT50 days

Chemical Name

| | <u>Values</u> | <u>Method</u> | <u>Remarks</u> |
|--------------|---------------|---------------|----------------|
| Ethofumesate | : 208 | OECD 308 | |
| Phenmedipham | : 6.8 | | |

Soil DT50 days

Chemical Name

| | | | |
|--------------|--------|----------|-------|
| Ethofumesate | : 37.8 | OECD 307 | Field |
| Phenmedipham | : 26.8 | | |

Biodegradation

Chemical Name

| | | | |
|--------------|-----------------------------|-----------|--|
| Ethofumesate | : Not readily biodegradable | OECD 301D | |
| Phenmedipham | : Not readily biodegradable | | |

12.3. Bioaccumulative potential

Partition Coefficient

(n-octanol/water) Log Pow

Chemical Name

| | | | |
|--------------|-------|----------|-------------------|
| Ethofumesate | : 2.7 | OECD 107 | pH 6.4, 20-25 ° C |
| Phenmedipham | : 2.7 | OECD 107 | pH 4, 20 ° C |

Bioconcentration factor (BCF)

Chemical Name

| | | | |
|--------------|--------|--|-------------------|
| Ethofumesate | : ---- | | No data available |
| Phenmedipham | : --- | | |

12.4. Mobility in soil

Adsorption/Desorption

Chemical Name

| | <u>Values</u> | <u>Method</u> | <u>Remarks</u> |
|--------------|---------------|---------------|----------------|
| Ethofumesate | : 118 | OECD 106 | KOC Kfoc |
| Phenmedipham | : 1331 | | |

12.5. Results of PBT and vPvB assessment

The components in this formulation do not meet the criteria for classification as PBT or vPvB

12.6. Other adverse effects

No information available.

Section 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

| | |
|--|---|
| Waste from residues/unused products | Disposal should be in accordance with applicable regional, national and local laws and regulations. |
| Contaminated packaging | Improper disposal or reuse of this container may be dangerous and illegal. |
| Other Information | Waste codes should be assigned by the user based on the application for which the product was used. |

Section 14: TRANSPORTATION INFORMATION

IMDG/IMO

| | |
|--|--|
| 14.1 UN/ID No * | 3082 |
| 14.2 Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenmedipham, Ethofumesate) |
| 14.3 Hazard Class | 9 |
| 14.4 Packing Group | III |
| 14.5 Marine pollutant | Yes |
| 14.6 Special precautions for user | |

RID/ADR

| | |
|--|--|
| 14.1 UN/ID No * | 3082 |
| 14.2 Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenmedipham, Ethofumesate) |
| 14.3 Hazard Class | 9 |
| 14.4 Packing Group | III |
| 14.5 Environmental hazard | Yes |
| 14.6 Special precautions for user | |
| 14.7 Tunnel restriction code | - |

ICAO/IATA

| | |
|--|--|
| 14.1 UN/ID No * | 3082 |
| 14.2 Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Phenmedipham, Ethofumesate) |
| 14.3 Hazard Class | 9 |
| 14.4 Packing Group | III |
| 14.5 Environmental hazard | Yes |
| 14.6 Special precautions for user | |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code | Not Applicable |



* Note: UN3077 & UN3082 – These products may be transported as non-dangerous goods under the special provisions of IMDG Code 2.10.2.7; ADR SP375 and ICAO/IATA A197 when packed in single or inner packaging of up to 5L for liquids or 5 kg or less for solids.

Section 15: REGULATORY INFORMATION

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

| Trade name | Registration number | Registration date |
|----------------|---------------------|-------------------|
| Not Applicable | Not Applicable | Not Applicable |

15.2. Chemical safety assessment

A chemical safety assessment according to regulation (EC) No. 1907/2006 is not required. A risk assessment was performed according to directive (EC) No. 91/414 or according to regulation (EC) No. 1107/2009.

Section 16: OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3

H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H317 - May cause an allergic skin reaction
H319 - Causes serious eye irritation
H400 - Very toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H412 - Harmful to aquatic life with long lasting effects

List of Acronyms

ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road
ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
CAS Number - Chemical Abstracts Service number
EC Number - EINECS and ELINCS Number
EINECS - European Inventory of Existing Commercial Substances
ELINCS - European List of notified Chemical Substances
IATA - International Air Transport Association
ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air
IMDG - International Maritime Dangerous Goods
LC50 - Lethal Concentration to 50 % of a test population
LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)
OECD - Organization for Economic Co-operation and Development
PBT - Persistent, Bioaccumulative and Toxic substance
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT - Specific Target Organ Toxicity
vPvB - Very Persistent and Very Bioaccumulative

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

Revision Note Changes made to the last version are labeled with this sign ***.

Process of classification evaluation in accordance with CLP regulation.

Classification of the mixture

H317 - May cause an allergic skin reaction
H410 - Very toxic to aquatic life with long lasting effects

Classification procedure

Classification based on test data
Classification based on Calculation method

Disclaimer

The information provided in this Material 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.

End of Safety Data Sheet