

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
 Product name : ETHEPHON 2
 Other means of identification : EPA Reg. No. 66330-262

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

Use of the substance/mixture : Herbicide

1.3. Details of the supplier of the safety data sheet

Arysta LifeScience North America LLC
 15401 Weston Parkway, Suite 150
 Cary, NC 27513 – USA

1.4. Emergency telephone number

Emergency number : Exposure Calls (PROSAR): +1-866-303-6952 or +1-651-603-3432 (international)
 Spill Calls (CHEMTREC) (Contract # CCN1779): +1-800-424-9300 or +1-703-527-3887 (international)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Met. Corr. 1 H290
 Acute Tox. 4 (Dermal) H312
 Skin Corr. 1C H314
 Eye Dam. 1 H318
 Skin Sens. 1B H317
 STOT SE 3 H335

Full text of H statements : see section 16

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) :

Danger

Hazard statements (GHS-US) :

H290 - May be corrosive to metals
 H312 - Harmful in contact with skin
 H314 - Causes severe skin burns and eye damage
 H317 - May cause an allergic skin reaction
 H335 - May cause respiratory irritation

Precautionary statements (GHS-US) :

P234 - Keep only in original container
 P260 - Do not breathe mist, vapours
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray
 P264 - Wash hands, forearms and face thoroughly after handling
 P271 - Use only outdoors or in a well-ventilated area
 P272 - Contaminated work clothing must not be allowed out of the workplace
 P280 - Wear eye protection, face protection, protective clothing, protective gloves
 P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting
 P302+P352 - If on skin: Wash with plenty of water
 P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing
 P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a doctor
 P312 - Call a poison center/doctor/... if you feel unwell
 P321 - Specific treatment (see First aid measures on this label)
 P333+P313 - If skin irritation or rash occurs: Get medical advice/attention

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P362+P364 - Take off contaminated clothing and wash it before reuse
P363 - Wash contaminated clothing before reuse
P390 - Absorb spillage to prevent material damage
P403+P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up
P406 - Store in corrosive resistant container with a resistant inner liner
P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

No additional information available

2.4. Unknown acute toxicity (GHS US)

Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	% (w/w)	GHS-US classification
ethephon	(CAS No) 16672-87-0	15 – 25	Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1C, H314 Aquatic Chronic 3, H412

*Chemical name, CAS number and/or exact concentration have been withheld as a trade secret

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. IF exposed or concerned: Get medical advice/attention.

First-aid measures after inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after skin contact : For even minor contact, immediately remove contaminated clothing. Wash skin thoroughly with mild soap and water. Wash contaminated clothing before reuse. Get immediate medical advice/attention.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

First-aid measures after ingestion : Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

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

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction.

Symptoms/injuries after eye contact : Causes serious eye damage.

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

All treatments should be based on observed signs and symptoms of distress in the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Use extinguishing media appropriate for surrounding fire.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Not flammable. Burning produces irritating, toxic and noxious fumes.

Reactivity : Thermal decomposition generates : Corrosive vapours.

5.3. Advice for firefighters

Firefighting instructions : Cool adjacent structures and containers with water spray to protect and prevent ignition. Do not allow run-off from fire fighting to enter drains or water courses. Exercise caution when fighting any chemical fire.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Use self-contained breathing apparatus.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Avoid all eye and skin contact and do not breathe vapour and mist.

6.1.1. For non-emergency personnel

Protective equipment : Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.

Emergency procedures : Keep upwind. Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Chemical goggles or safety glasses. Wear suitable protective clothing and gloves.

Emergency procedures : Stop leak if safe to do so. Ventilate area. Keep upwind.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Sweep or shovel spills into appropriate container for disposal.

6.4. Reference to other sections

Section 13: disposal information. Section 7: safe handling. Section 8: personal protective equipment.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not breathe mist, vapours. Do not get in eyes, on skin, or on clothing. Use only outdoors or in a well-ventilated area.

Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Comply with applicable regulations.

Storage conditions : Keep container tightly closed. Do not store near food, foodstuffs, drugs, or potable water supplies. Protect against frost.

Incompatible products : Strong oxidizers. Strong bases.

Incompatible materials : Metals.

Prohibitions on mixed storage : Keep away from incompatible materials.

Storage area : Store in dry, cool, well-ventilated area. Store out of frost (-10 °C). Store away from heat.

Special rules on packaging : Do not use metal containers.

7.3. Specific end use(s)

Herbicide.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ETHEPHON 2	
ACGIH	Not applicable
OSHA	Not applicable
ethephon (16672-87-0)	
ACGIH	Not applicable
OSHA	Not applicable

8.2. Exposure controls

Appropriate engineering controls : Avoid splashing. Use only outdoors or in a well-ventilated area.

Personal protective equipment : Avoid all unnecessary exposure.

Hand protection : Wear suitable gloves resistant to chemical penetration. PVC. nitrile rubber gloves.

Eye protection : Chemical goggles or safety glasses. Face shield.

Skin and body protection : Wear suitable protective clothing. Long sleeved protective clothing. Rubber Apron. Foot protection.

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Respiratory protection	: In case of inadequate ventilation wear respiratory protection. If needed, use an air-purifying respirator with organic vapor cartridges and a dust/mist prefilter.
Environmental exposure controls	: Prevent leakage or spillage.
Consumer exposure controls	: Keep out of reach of children.
Other information	: Do not eat, drink or smoke when using this product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear liquid.
Colour	: Colourless
Odour	: odourless
Odour threshold	: No data available
pH	: 1.7
Melting point	: No data available
Freezing point	: <= -20 °C
Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Vapour pressure	: 0.00006 mm Hg @ 20 °C
Relative density	: 1.1 g/ml
Relative vapour density at 20 °C	: No data available
Solubility	: Totally soluble in water in all proportions. Water: 100 %
Log Pow	: No data available
Log Kow	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Thermal decomposition generates : Corrosive vapours.

10.2. Chemical stability

Unstable at extreme pH's and upon exposure to UV light.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur. Risk of ethylene emission with increasing pH.

10.4. Conditions to avoid

Avoid excessive heat or cold.

10.5. Incompatible materials

Strong bases. zinc. Strong oxidizers. Iron or steel. copper. Aluminum. Sodium chlorate.

10.6. Hazardous decomposition products

Thermal decomposition generates : Corrosive vapours. Carbon oxides (CO, CO₂). Phosphorus oxides. hydrogen chloride.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Skin and eye contact; Inhalation
Acute toxicity : Dermal: Harmful in contact with skin.

ETHEPHON 2	
LD50 oral rat	3200 mg/kg
LD50 dermal rat	1700 mg/kg
LC50 inhalation rat (mg/l)	> 4.9 mg/l/4h
ATE US (oral)	3200.000 mg/kg bodyweight
ATE US (dermal)	1700.000 mg/kg bodyweight

ethephon (16672-87-0)	
LD50 oral rat	3030 mg/kg
LD50 dermal rabbit	1560 mg/kg
LC50 inhalation rat (mg/l)	4.52 mg/l/4h
ATE US (oral)	3030.000 mg/kg bodyweight
ATE US (dermal)	1560.000 mg/kg bodyweight
ATE US (vapours)	4.520 mg/l/4h
ATE US (dust,mist)	4.520 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.
Serious eye damage/irritation : Causes serious eye damage.
Respiratory or skin sensitisation : May cause an allergic skin reaction.
(Positive)
Germ cell mutagenicity : Not classified
Carcinogenicity : Not classified
Reproductive toxicity : Not classified
Specific target organ toxicity (single exposure) : May cause respiratory irritation.
Specific target organ toxicity (repeated exposure) : Not classified
Aspiration hazard : Not classified
Symptoms/injuries after inhalation : May cause respiratory irritation.
Symptoms/injuries after skin contact : Repeated exposure to this material can result in absorption through skin causing significant health hazard. Harmful in contact with skin. Causes severe skin burns and eye damage. May cause an allergic skin reaction.
Symptoms/injuries after eye contact : Causes serious eye damage.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life with long lasting effects.

ethephon (16672-87-0)	
LC50 fish 1	254 mg/l O. ykiss
EC50 Daphnia 1	1000 mg/l 24-48 h
EC50 other aquatic organisms 1	32 mg/l 48 h
LC50 fish 2	222 mg/l Bluegill

12.2. Persistence and degradability

ETHEPHON 2	
Persistence and degradability	May cause long-term adverse effects in the environment.

ethephon (16672-87-0)	
Persistence and degradability	Not expected to persist. Readily biodegradable.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

ethephon (16672-87-0)	
Ecology - soil	Slightly mobile in soil.

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12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods	: Do not dispose in household garbage.
Sewage disposal recommendations	: Do not dispose of waste into sewer.
Waste disposal recommendations	: Dispose in a safe manner in accordance with local/national regulations.
Additional information	: Do not attempt disposal by burning.
Ecology - waste materials	: Empty containers should be taken for recycle, recovery or waste in accordance with local regulation.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description	: UN3265 Corrosive liquid, acidic, organic, n.o.s. (ethephon), 8, III
UN-No.(DOT)	: UN3265
Proper Shipping Name (DOT)	: Corrosive liquid, acidic, organic, n.o.s. (ethephon)
Transport hazard class(es) (DOT)	: 8 - Class 8 - Corrosive material 49 CFR 173.136
Hazard labels (DOT)	: 8 - Corrosive



Packing group (DOT)	: III - Minor Danger
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Additional information

Other information	: No supplementary information available.
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ADR

Transport document description	: UN 3265 CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ethephon), 8, III, (E)
Packing group (ADR)	: III
Class (ADR)	: 8 - Corrosive substances
Hazard identification number (Kemler No.)	: 80
Classification code (ADR)	: C3
Danger labels (ADR)	: 8 - Corrosive substances



Orange plates	: 
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Tunnel restriction code (ADR)	: E
Limited quantities (ADR)	: 5I
Excepted quantities (ADR)	: E1

Transport by sea

IMDG

Transport hazard class(es) (IMDG)	: 8
Danger labels (IMDG)	: 8
UN-No. (IMDG)	: 3265

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Proper Shipping Name (IMDG)	: CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. (ethephon)
Class (IMDG)	: 8 - Corrosive substances
Packing group (IMDG)	: III - substances presenting low danger
EmS-No. (Fire)	: F-A
EmS-No. (Spillage)	: S-B

Air transport

IATA

Transport hazard class(es) (IATA)	: 8
Hazard labels (IATA)	: 8
UN-No. (IATA)	: 3265
Proper Shipping Name (IATA)	: Corrosive liquid, acidic, organic, n.o.s. (ethephon)
Class (IATA)	: 8 - Corrosives
Packing group (IATA)	: III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

ethephon (16672-87-0)

Not listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

ethephon (16672-87-0)

Not listed on the Canadian DSL (Domestic Substances List) inventory

EU-Regulations

ethephon (16672-87-0)

Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

National regulations

ethephon (16672-87-0)

Not listed on the Canadian Non-Domestic Substances List (NDSL)

15.3. US State regulations

No additional information available

15.4. US EPA – FIFRA Regulations

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

Signal word (FIFRA)	: DANGER.
Hazard statements (FIFRA)	: Causes irreversible eye damage and skin burns. Harmful if swallowed or absorbed through skin. Do not get in eyes on skin or on clothing. Avoid breathing spray mist. Avoid contamination of food.
Environmental hazards	: Do not apply directly to water, or to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters.

SECTION 16: Other information

Revision date	: 02/25/2016
Data sources	: ACGIH (American Conference of Government Industrial Hygienists). National Fire Protection Association. Fire Protection Guide to Hazardous Materials; 10th edition. Krister Forsberg and S.Z. Mansdorf, "Quick Selection Guide to Chemical Protective Clothing", Fifth Edition. NIOSH Occupational Health Guide for chemical Substances - Vol. II, September, 1978. OSHA 29CFR 1910.1200 Hazard Communication Standard. TSCA Chemical Substance Inventory. Accessed at http://www.epa.gov/oppt/existingchemicals/pubs/tscainventory/howto.html .

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Abbreviations and acronyms : ATE: Acute Toxicity Estimate.
CAS (Chemical Abstracts Service) number.
CLP: Classification, Labelling, Packaging.
EC50: Environmental Concentration associated with a response by 50% of the test population.
LD50: Lethal Dose for 50% of the test population.
GHS: Globally Harmonized System (of Classification and Labeling of Chemicals).
NOEC: No Observable Effect Concentration.
OSHA: Occupational Safety & Health Administration.
TSCA: Toxic Substances Control Act.

Other information : None.

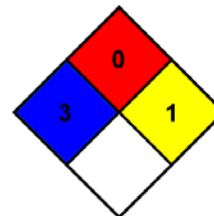
Full text of H-statements:

H290	May be corrosive to metals
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H332	Harmful if inhaled
H335	May cause respiratory irritation
H412	Harmful to aquatic life with long lasting effects

NFPA health hazard : 3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.

NFPA fire hazard : 0 - Materials that will not burn.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



Indication of changes:
Transport information.

Redstone SDS US GHS for Arysta

SDS Prepared by: The Redstone Group, LLC.
6077 Frantz Rd
Suite 206
Dublin, Ohio, USA 43016
614.923.7472
www.redstonegrp.com

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product