

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

1.1. Identification

Product form : Mixture
 Product name : 5.1-0-0-13 (CI)
 Other means of identification : Ammonium chloride solution

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

Use of the substance/mixture : Various agricultural applications

1.3. Details of the supplier of the safety data sheet

Two Rivers Terminal
 3300 North Glade Road
 Pasco, Wa. 99302 - USA
 T 509-547-7776 - F 509-546-9508
www.tworiversterminal.com

1.4. Emergency telephone number

Emergency number : 24 Hour Emergency HAZMAT Response: (800) 229-5252; EPA National Response Center (800) 424-8802

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Not classified

2.2. Label elements

GHS-US labeling

No labeling applicable

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 | % | Classification (GHS-US) |
|-------------------|---------------------|------------|---------------------------|
| ammonium chloride | (CAS No) 12125-02-9 | 16 - 21.25 | Acute Tox. 4 (Oral), H302 |

Full text of H-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If you feel unwell, seek medical advice (show the label where possible).
 First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
 First-aid measures after skin contact : Wash skin with plenty of water.
 First-aid measures after eye contact : Rinse eyes with water as a precaution.
 First-aid measures after ingestion : Consult a doctor/medical service if you feel unwell.

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

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use.
 Symptoms/injuries after inhalation : May cause respiratory irritation.
 Symptoms/injuries after skin contact : May cause slight irritation to the skin.
 Symptoms/injuries after eye contact : May cause slight irritation.
 Symptoms/injuries after ingestion : May cause gastrointestinal discomfort.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8 Exposure controls/personal protection".

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Take up liquid spill into absorbent material.

Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 8 : Exposure-controls/personal protection".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Wear personal protective equipment.

Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store in a well-ventilated place. Keep cool.

Incompatible products : acids and bases. Metal oxides. Silver salts. Oxidizing agents.

Storage area : Keep container in a well-ventilated place.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

| ammonium chloride (12125-02-9) | | |
|--------------------------------|---------------------------------|----------------------|
| ACGIH | ACGIH TWA (mg/m ³) | 10 mg/m ³ |
| ACGIH | ACGIH STEL (mg/m ³) | 20 mg/m ³ |
| ACGIH | Remark (ACGIH) | Eye & URT irr |

8.2. Exposure controls

Appropriate engineering controls : Ensure good ventilation of the work station.

Hand protection : Protective gloves.

Eye protection : Safety glasses.

Skin and body protection : Wear suitable protective clothing.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.

Environmental exposure controls : Avoid release to the environment.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Physical state | : Liquid |
| Color | : Mixture contains one or more component(s) which have the following colour(s): Colourless to white |
| Odor | : There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour(s): Odourless |
| Odor threshold | : No data available |
| pH | : 7 - 8 |
| Melting point | : Not applicable |
| Freezing point | : No data available |
| 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 |
| Explosion limits | : No data available |
| Explosive properties | : No data available |
| Oxidizing properties | : No data available |
| Vapor pressure | : No data available |
| Relative density | : No data available |
| Relative vapor density at 20 °C | : No data available |
| Specific gravity / density | : 1.06 g/ml |
| Solubility | : No data available |
| Log Pow | : 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

The product is non-reactive under normal conditions of use, storage and transport.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

10.5. Incompatible materials

acids and bases. Lead salts. Silver salts. Oxidizing agents.

10.6. Hazardous decomposition products

ammonia. hydrogen chloride. Nitrogen oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

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| ammonium chloride (12125-02-9) | |
|--------------------------------|------------------------------------|
| LD50 oral rat | 1650 mg/kg (Rat; Literature study) |
| ATE US (oral) | 1650.000 mg/kg body weight |

| | |
|----------------------------------------------------|--------------------------------------------|
| Skin corrosion/irritation | : Not classified pH: 7 - 8 |
| Serious eye damage/irritation | : Not classified pH: 7 - 8 |
| Respiratory or skin sensitization | : Not classified |
| Germ cell mutagenicity | : Not classified |
| Carcinogenicity | : Not classified |
| Reproductive toxicity | : Not classified |
| Specific target organ toxicity (single exposure) | : Not classified |
| 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 | : May cause slight irritation to the skin. |
| Symptoms/injuries after eye contact | : May cause slight irritation. |
| Symptoms/injuries after ingestion | : May cause gastrointestinal discomfort. |

SECTION 12: Ecological information

12.1. Toxicity

| | |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|
| Ecology - general | : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment. |
|-------------------|-------------------------------------------------------------------------------------------------------------------------|

| ammonium chloride (12125-02-9) | |
|--------------------------------|------------------------------------------------------|
| LC50 fish 1 | 209 mg/l (96 h; Cyprinus carpio; Ammonia) |
| EC50 Daphnia 1 | 161 mg/l (48 h; Daphnia magna; Static system) |
| LC50 fish 2 | 1.51 - 2.1 mg/l (96 h; Pimephales promelas; Ammonia) |
| EC50 Daphnia 2 | 50 mg/l (96 h; Daphnia magna; Static system) |
| TLM fish 1 | 6 mg/l (96 h; Lepomis macrochirus) |
| Threshold limit algae 1 | 5 ppm (672 h; Potamogeton sp.; O2 evolution) |
| Threshold limit algae 2 | < 70 mg/l (240 h; Algae; Nitrogen) |

12.2. Persistence and degradability

| ammonium chloride (12125-02-9) | |
|--------------------------------|---------------------------------|
| Persistence and degradability | Readily biodegradable in water. |

12.3. Bioaccumulative potential

| ammonium chloride (12125-02-9) | |
|--------------------------------|----------------------------------|
| Log Pow | -4.37 (Estimated value) |
| Bioaccumulative potential | Bioaccumulation: not applicable. |

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

| | |
|------------------------------|------------------------------------------------------|
| Effect on the global warming | : No known ecological damage caused by this product. |
|------------------------------|------------------------------------------------------|

SECTION 13: Disposal considerations

13.1. Waste treatment methods

| | |
|---------------------------------|--------------------------------------------------------------------------------|
| Sewage disposal recommendations | : Prevent liquid from entering sewers, watercourses, underground or low areas. |
| Waste disposal recommendations | : Dispose in a safe manner in accordance with local/national regulations. |
| Ecology - waste materials | : Avoid release to the environment. |

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SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT

Transport document description : UN3082 Environmentally hazardous substances, liquid, n.o.s. (Ammonium Chloride), 9, III

UN-No.(DOT) : UN3082

Proper Shipping Name (DOT) : Environmentally hazardous substances, liquid, n.o.s.
Ammonium Chloride

Hazard Classes (DOT) : 9 - Class 9 - Miscellaneous hazardous material 49 CFR 173.140

Hazard labels (DOT) : 9 - Class 9 (Miscellaneous dangerous materials)



Packing group (DOT) : III - Minor Danger

DOT Packaging Non Bulk (49 CFR 173.xxx) : 203

DOT Packaging Bulk (49 CFR 173.xxx) : 241

DOT Symbols : G - Identifies PSN requiring a technical name

DOT Special Provisions (49 CFR 172.102) : 8 - A hazardous substance that is not a hazardous waste may be shipped under the shipping description "Other regulated substances, liquid or solid, n.o.s.", as appropriate. In addition, for solid materials, special provision B54 applies.

146 - This description may be used for a material that poses a hazard to the environment but does not meet the definition for a hazardous waste or a hazardous substance, as defined in 171.8 of this subchapter, or any hazard class as defined in Part 173 of this subchapter, if it is designated as environmentally hazardous by the Competent Authority of the country of origin, transit or destination.

173 - An appropriate generic entry may be used for this material.

335 - Mixtures of solids that are not subject to this subchapter and environmentally hazardous liquids or solids may be classified as "Environmentally hazardous substances, solid, n.o.s.," UN3077 and may be transported under this entry, provided there is no free liquid visible at the time the material is loaded or at the time the packaging or transport unit is closed. Each transport unit must be leak-proof when used as bulk packaging.

IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).

T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)

TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.

TP29 - A portable tank having a minimum test pressure of 1.5 bar (150.0 kPa) may be used provided the calculated test pressure is 1.5 bar or less based on the MAWP of the hazardous materials, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 155

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Other information : No supplementary information available.

TDG

No additional information available

Transport by sea

UN-No. (IMDG) : 3082

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Class (IMDG) : 9 - Miscellaneous dangerous compounds

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Packing group (IMDG) : III - substances presenting low danger

Air transport

UN-No.(IATA) : 3082
Proper Shipping Name (IATA) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Class (IATA) : 9 - Miscellaneous Dangerous Goods
Packing group (IATA) : III - Minor Danger

SECTION 15: Regulatory information

15.1. US Federal regulations

ammonium chloride (12125-02-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory
Not listed on SARA Section 313 (Specific toxic chemical listings)

| | |
|--------------------------------------------------------------|---------|
| RQ (Reportable quantity, section 304 of EPA's List of Lists) | 5000 lb |
|--------------------------------------------------------------|---------|

15.2. International regulations

CANADA

No additional information available

EU-Regulations

No additional information available

National regulations

No additional information available

15.3. US State regulations

ammonium chloride (12125-02-9)

U.S. - Massachusetts - Right To Know List
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - Pennsylvania - RTK (Right to Know) List

SECTION 16: Other information

Indication of changes : Transport information.

Revision date : 09/07/2015

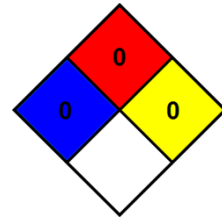
Full text of H-phrases:

| | |
|---------------------|----------------------------------|
| Acute Tox. 4 (Oral) | Acute toxicity (oral) Category 4 |
| H302 | Harmful if swallowed |

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.

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

NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



SDS US (GHS HazCom 2012)

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