1. PRODUCT AND COMPANY IDENTIFICATION

Product name: Ammonium formate
Product Number: 156294
Brand: Sigma-Aldrich
Supplier: Sigma-Aldrich

3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone: +1 800-325-8832
Fax: +1 800-325-5052
Emergency Phone # (For both supplier and manufacturer): (314) 776-8555

Preparation Information: Sigma-Aldrich Corporation
Product Safety - Americas Region
1 800-521-8556

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Irritant

GHS Classification
Acute toxicity, Oral (Category 2)
Skin irritation (Category 2)
Eye irritation (Category 2A)
Specific target organ toxicity - single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:

Signal word: Warning

Hazard statement(s):
H303 May be harmful if swallowed.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s):
P261 Avoid breathing dust/ fume/ gas/ mist/ vapour/ spray.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification
Health hazard: 2
Flammability: 0
Physical hazards: 0

NFPA Rating
Health hazard: 2

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Formic acid ammonium salt
Formula: CH₃NO₂
Molecular Weight: 63.08 g/mol

Component Concentration
Ammonium formate
CAS No. 540-69-2
EC-No. 208-753-9

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIREFIGHTING MEASURES

Conditions of flammability
Not flammable or combustible.

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire fighters
Wear self-contained breathing apparatus for fire fighting if necessary.

Hazardous combustion products
Hazardous decomposition products formed under fire conditions - Carbon oxides, nitrogen oxides (NOx)

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

Environmental precautions
Do not let product enter drains.

Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Fire:
Reactivity Hazard:
Potential Health Effects
Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.
Skin: May be harmful if absorbed through skin. Causes skin irritation.
Eyes: Causes eye irritation.
Ingestion: May be harmful if swallowed.

Date: 03/08/2013
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7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate ventilation at places where dust is formed.

Conditions for safe storage:
Keep container tightly closed in a dry and well-ventilated place.
Hygroscopic: room temperature

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment:

Respiratory protection:
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection:
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Immersion protection:
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: ≥ 480 min
Material tested: Dermat® 9 (Aldrich Z077272, Size M)

Splash protection:
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: ≥ 30 min
Material tested: Dermat® 9 (Aldrich Z077272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 673000, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Eye protection:
Safety glasses with side-shields conforming to EN166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin and body protection:
Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:
Form: crystalline
Colour: colourless

10. STABILITY AND REACTIVITY

Chemical stability:
Stable under recommended storage conditions.

Possibility of hazardous reactions:
No data available.

Conditions to avoid:
Exposure to moisture.

Materials to avoid:
Strong oxidizing agents, strong acids.

Hazardous decomposition products:
Hazardous decomposition products formed under fire conditions: Carbon oxides, nitrogen oxides (NOx)
Other decomposition products: no data available

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:
Oral LD50:
LD50 Oral: mouse - 2,250 mg/kg

Inhalation LC50:
No data available.

Dermal LD50:
No data available.

Other Information on acute toxicity:
No data available.

Skin corrosion/irritation:
No data available.
Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Teratogenicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
no data available

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

- **Inhalation**: May be harmful if inhaled. Causes respiratory tract irritation.
- **Ingestion**: May be harmful if swallowed.
- **Skin**: May be harmful if absorbed through skin. Causes skin irritation.
- **Eyes**: Causes eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Synergistic effects
no data available

Additional Information
RTCSG: Q20650000

12. ECOLOGICAL INFORMATION

Toxicity
no data available

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

13. DISPOSAL CONSIDERATIONS

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

 IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards
Irreant

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

- **Ammonium formate**
  - CAS-No.: 540-69-2
  - Revision Date: 1987-01-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

- **Ammonium formate**
  - CAS-No.: 540-69-2
  - Revision Date: 1987-01-01

New Jersey Right To Know Components

- **Ammonium formate**
  - CAS-No.: 540-69-2
  - Revision Date: 1987-01-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Further information
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