

# Safety Data Sheet

## Ammonium bicarbonate SH Food Grade

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### 1. Identification

#### Product identifier used on the label

## Ammonium bicarbonate SH Food Grade

#### Recommended use of the chemical and restriction on use

Recommended use\*: process chemical; food additive(s); Raw material; propellant; Laboratory chemicals

Suitable for use in industrial sector: chemical industry

\* The "Recommended use" identified for this product is provided solely to comply with a Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

#### Details of the supplier of the safety data sheet

##### Company:

BASF CORPORATION  
100 Park Avenue  
Florham Park, NJ 07932, USA

Telephone: +1 973 245-6000

#### Emergency telephone number

CHEMTREC: 1-800-424-9300  
BASF HOTLINE: 1-800-832-HELP (4357)

#### Other means of identification

Molecular formula:  $\text{NH}_4\text{HCO}_3$   
Synonyms: Ammonium Hydrogen Carbonate

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### 2. Hazards Identification

#### According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

#### Classification of the product

Acute Tox.	4 (oral)	Acute toxicity
Aquatic Acute	3	Hazardous to the aquatic environment - acute

#### Label elements

Pictogram:

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Signal Word:  
Warning

Hazard Statement:  
H302 Harmful if swallowed.  
H402 Harmful to aquatic life.

Precautionary Statements (Prevention):  
P273 Avoid release to the environment.  
P270 Do not eat, drink or smoke when using this product.  
P264 Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):  
P312 Call a POISON CENTER or doctor/physician if you feel unwell.  
P301 + P330 IF SWALLOWED: rinse mouth.

Precautionary Statements (Disposal):  
P501 Dispose of contents/container to hazardous or special waste collection point.

### Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture. No specific dangers known, if the regulations/notes for storage and handling are considered.

#### Labeling of special preparations (GHS):

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % dermal

The following percentage of the mixture consists of components(s) with unknown hazards regarding the acute toxicity: 0 - 1 % Inhalation - dust

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### 3. Composition / Information on Ingredients

**According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200**

<u>CAS Number</u>	<u>Weight %</u>	<u>Chemical name</u>
1066-33-7	>= 75.0 - <= 100.0%	ammonium hydrogencarbonate

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### 4. First-Aid Measures

#### Description of first aid measures

##### If inhaled:

After inhalation of decomposition products: Keep patient calm, remove to fresh air, seek medical attention.

##### If on skin:

Wash thoroughly with soap and water.

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If irritation develops, seek medical attention.

### **If in eyes:**

Wash affected eyes for at least 15 minutes under running water with eyelids held open.

Seek medical attention.

### **If swallowed:**

Rinse mouth immediately and then drink plenty of water, seek medical attention.

### **Most important symptoms and effects, both acute and delayed**

Symptoms: Overexposure may cause:, vomiting, shortness of breath, nausea, coughing

### **Indication of any immediate medical attention and special treatment needed**

#### Note to physician

Treatment:

After inhalation of decomposition products: Pulmonary odema prophylaxis. Treat according to symptoms (decontamination, vital functions), no known specific antidote, administer corticosteroid dose aerosol to prevent pulmonary odema.

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## 5. Fire-Fighting Measures

### **Extinguishing media**

Suitable extinguishing media:  
water spray, carbon dioxide, foam

### **Special hazards arising from the substance or mixture**

Hazards during fire-fighting:  
ammonia, carbon dioxide,  
The substances/groups of substances mentioned can be released in case of fire.

### **Advice for fire-fighters**

Protective equipment for fire-fighting:  
Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

### **Further information:**

Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered.

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## 6. Accidental release measures

### **Personal precautions, protective equipment and emergency procedures**

Breathing protection required.

### **Environmental precautions**

This product is regulated by CERCLA ('Superfund').

### **Methods and material for containment and cleaning up**

For residues: Dampen, pick up mechanically and dispose of.

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### 7. Handling and Storage

#### Precautions for safe handling

No special measures necessary provided product is used correctly. Avoid dust formation. Ensure suitable air extract/ventilation on process machinery and transportation equipment. Ensure thorough ventilation of stores and work areas. The temperatures which must be avoided are to be considered. Sealed containers should be protected against heat as this results in pressure build-up. Handle in accordance with good industrial hygiene and safety practice.

Protection against fire and explosion:

See MSDS section 5 - Fire fighting measures.

#### Conditions for safe storage, including any incompatibilities

Segregate from nitrites and alkaline substances. Storage and transport only combined with food materials or food additives. Separate from flavoring agents. Segregate from strong acids. Segregate from strong bases.

Do not store with: Sodium nitrate

Further information on storage conditions: Keep container tightly closed and dry. Keep only in the original container in a cool, well-ventilated place. Keep at temperature not exceeding 30 °C.

Storage stability:

Keep container dry.

Protect against moisture.

Protect from temperatures above: 30 °C

Changes in the properties of the product may occur if substance/product is stored above indicated temperature for extended periods of time.

### 8. Exposure Controls/Personal Protection

#### Components with occupational exposure limits

No occupational exposure limits known.

The substance mentioned develops if the regulation/notes for storage and handling are not observed. When the product is handled at elevated temperature, the occupational exposure limit should be noted.

carbon dioxide	OSHA PEL	PEL 5,000 ppm 9,000 mg/m <sup>3</sup> ; STEL value 30,000 ppm 54,000 mg/m <sup>3</sup> ; TWA value 10,000 ppm 18,000 mg/m <sup>3</sup> ;
	ACGIH TLV	STEL value 30,000 ppm ; TWA value 5,000 ppm ;
ammonia	OSHA PEL	PEL 50 ppm 35 mg/m <sup>3</sup> ; STEL value 35 ppm 27 mg/m <sup>3</sup> ;
	ACGIH TLV	TWA value 25 ppm ; STEL value 35 ppm ;

#### Advice on system design:

Provide local exhaust ventilation to control dust.

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### Personal protective equipment

#### **Respiratory protection:**

Breathing protection if gases/vapours are formed. Observe OSHA regulations for respirator use (29 CFR 1910.134).

#### **Hand protection:**

Wear chemical resistant protective gloves., Consult with glove manufacturer for testing data.

#### **Eye protection:**

Tightly fitting safety goggles (chemical goggles).

#### **Body protection:**

Body protection must be chosen depending on activity and possible exposure, e.g. head protection, apron, protective boots, chemical-protection suit.

#### **General safety and hygiene measures:**

Do not breathe dust. At the end of the shift the skin should be cleaned and skin-care agents applied.

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## 9. Physical and Chemical Properties

Form:	crystalline, powder
Odour:	ammonia-like
Odour threshold:	No applicable information available.
Colour:	white
pH value:	7.7 ( 10 %(m), 20 °C)
Melting point:	The substance / product decomposes.
Boiling range:	Study technically not feasible., The substance / product decomposes therefore not determined.
Flash point:	not applicable, the product is a solid
Flammability:	not flammable (other)
Lower explosion limit:	For solids not relevant for classification and labelling.
Upper explosion limit:	For solids not relevant for classification and labelling.
Vapour pressure:	79 mbar ( 25.4 °C) 526 mbar ( 50 °C)
Density:	1.58 g/cm <sup>3</sup> ( 20 °C)
Bulk density:	approx. 850 kg/m <sup>3</sup>
Partitioning coefficient n-octanol/water (log Pow):	-2.4 ( 25 °C)
Thermal decomposition:	> 30 °C To avoid thermal decomposition, do not overheat.
Viscosity, dynamic:	not applicable
Solubility in water:	220 g/l ( 20 °C) Literature data.
Evaporation rate:	negligible, The product is a non-volatile solid.

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### 10. Stability and Reactivity

#### Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

#### Chemical stability

The product is stable if stored and handled as prescribed/indicated. Slow decomposition possible.

#### Possibility of hazardous reactions

Exothermic reaction. Reacts with nitrates. Reacts with nitrites. Reacts with strong alkalis.

#### Conditions to avoid

See MSDS section 7 - Handling and storage.

Avoid heat.

#### Incompatible materials

nitrites, nitrates, strong bases, strong acids

#### Hazardous decomposition products

Decomposition products:

Hazardous decomposition products: ammonia, carbon dioxide

Thermal decomposition:

> 30 °C

To avoid thermal decomposition, do not overheat.

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### 11. Toxicological information

#### Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

#### Acute Toxicity/Effects

##### Acute toxicity

Assessment of acute toxicity: Of moderate toxicity after single ingestion. Virtually nontoxic after a single skin contact. Virtually nontoxic by inhalation. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

##### Oral

Type of value: LD50

Species: rat (male/female)

Value: approx. 1,576 mg/kg

##### Inhalation

Type of value: LC50

Species: rat (male/female)

Value: > 4.74 mg/l

Exposure time: 4.5 h

An aerosol was tested.

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

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### Dermal

Type of value: LD50

Species: rat (male/female)

Value: > 2,000 mg/kg

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Assessment other acute effects

Assessment of STOT single:

Apart from effects causing lethality, no specific target organ toxicity was observed in experimental studies.

### Irritation / corrosion

Assessment of irritating effects: Not irritating to the eyes. Not irritating to the skin. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

### Skin

Result: non-irritant

Method: OECD Guideline 431

Species: rabbit

Result: non-irritant

Method: other

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Eye

Result: Non corrosive.

Method: HET-CAM test in vitro

Species: rabbit

Result: non-irritant

Method: other

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Sensitization

Assessment of sensitization: Skin sensitizing effects were not observed in animal studies. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition. The chemical structure does not suggest a sensitizing effect.

Guinea pig maximization test

Species: guinea pig

Result: Non-sensitizing.

Method: other

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Aspiration Hazard

not applicable

## **Chronic Toxicity/Effects**

Repeated dose toxicity

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Assessment of repeated dose toxicity: Repeated oral uptake of the substance did not cause substance-related effects. The product has not been fully tested. The statements have been derived in parts from products of a similar structure or composition.

### Genetic toxicity

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture.

### Carcinogenicity

Assessment of carcinogenicity: The whole of the information assessable provides no indication of a carcinogenic effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Teratogenicity

Assessment of teratogenicity: No indications of a developmental toxic / teratogenic effect were seen in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### Other Information

development of pulmonary edema

## Symptoms of Exposure

Overexposure may cause: vomiting, shortness of breath, nausea, coughing

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## 12. Ecological Information

### Toxicity

#### Aquatic toxicity

Assessment of aquatic toxicity:

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

#### Toxicity to fish

LC50 (96 h) 63.4 mg/l, *Oncorhynchus mykiss* (Fish test acute)

#### Aquatic invertebrates

EC50 (48 h) 145.6 mg/l, *Daphnia magna* (Daphnia test acute, static)

#### Aquatic plants

EC50 (120 h) approx. 1,900 mg/l (growth rate), *Chlorella vulgaris* (static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

EC50 (18 d) 3,231 mg/l, *Chlorella vulgaris* (static)

The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

#### Chronic toxicity to fish

EC10 (30 d) 6.3 mg/l, *Lepomis macrochirus* (Flow through.)

#### Chronic toxicity to aquatic invertebrates

EC10 (70 d) 3.7 mg/l, *Daphnia magna* (semistatic)



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### Toxicity to terrestrial plants

No observed effect concentration (84 d) 749 mg/l  
The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

### **Microorganisms/Effect on activated sludge**

#### Toxicity to microorganisms

DIN 38412 Part 8 aquatic  
bacterium/EC10 (16 h): 1,347 mg/l

### **Persistence and degradability**

#### Assessment biodegradation and elimination (H<sub>2</sub>O)

Inorganic product which cannot be eliminated from water by biological purification processes. Can be oxidized to nitrate, or be reduced to nitrogen, by microorganisms.

#### Assessment of stability in water

According to structural properties, hydrolysis is not expected/probable.

### **Bioaccumulative potential**

#### Assessment bioaccumulation potential

Accumulation in organisms is not to be expected.

#### Bioaccumulation potential

Accumulation in organisms is not to be expected.

### **Mobility in soil**

#### Assessment transport between environmental compartments

Study scientifically not justified.  
Adsorption to solid soil phase is not expected.

### **Additional information**

Other ecotoxicological advice:

Do not release untreated into natural waters. At the present state of knowledge, no negative ecological effects are expected.

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## **13. Disposal considerations**

### **Waste disposal of substance:**

Test for use in agriculture.  
Dispose of in accordance with national, state and local regulations.

### **Container disposal:**

Dispose of in a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

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## **14. Transport Information**

### **Land transport**

USDOT

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Not classified as a dangerous good under transport regulations

### Sea transport IMDG

Not classified as a dangerous good under transport regulations

### Air transport IATA/ICAO

Not classified as a dangerous good under transport regulations

### Further information

Specific national features of transport regulations must be observed. They are to be found in the shipping documents.

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## 15. Regulatory Information

### Federal Regulations

#### Registration status:

Chemical TSCA, US released / listed

Food TSCA, US released / exempt

EPCRA 311/312 (Hazard categories): Acute;

<u>CERCLA RQ</u>	<u>CAS Number</u>	<u>Chemical name</u>
5000 LBS	1066-33-7	ammonium hydrogencarbonate
<b>Reportable Quantity for release:</b>		5,000 lb

### State regulations

<u>State RTK</u>	<u>CAS Number</u>	<u>Chemical name</u>
PA	1066-33-7	ammonium hydrogencarbonate
MA	1066-33-7	ammonium hydrogencarbonate
NJ	1066-33-7	ammonium hydrogencarbonate

### **NFPA Hazard codes:**

Health : 2      Fire: 0      Reactivity: 0      Special:

### **HMIS III rating**

Health: 2      Flammability: 0      Physical hazard: 0

### Assessment of the hazard classes according to UN GHS criteria (most recent version):

Acute Tox.	4 (oral)	Acute toxicity
Aquatic Acute	3	Hazardous to the aquatic environment - acute

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## 16. Other Information

**SDS Prepared by:**  
BASF NA Product Regulations

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