

AMMONIUM HYDROGEN CARBONATE

GHS Safety Data Sheet

Version No:2.0

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Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

AMMONIUM HYDROGEN CARBONATE

OTHER NAMES

C-H5-N-O3, C-H5-N-O3, NH_4HCO_3 , "carbonic acid monoammonium salt", "ammonium hydrogen carbonate", "monoammonium carbonate"

PRODUCT USE

Used in baking powder formulations; in cooling baths; in fire extinguishers; manufacture of porous plastics, ceramics, dyes, pigments; in compost heaps to accelerate decomposition; as fertiliser; for defatting textiles; in cold wave solutions; in chrome leather tanning; to remove gypsum from heat exchangers and other processing equipment.

SUPPLIER

Company: S D FINE- CHEM LIMITED

Address:

315- 317, T.V. INDUSTRIAL ESTATE,

248, WORLI,

MUMBAI- 400030.INDIA.

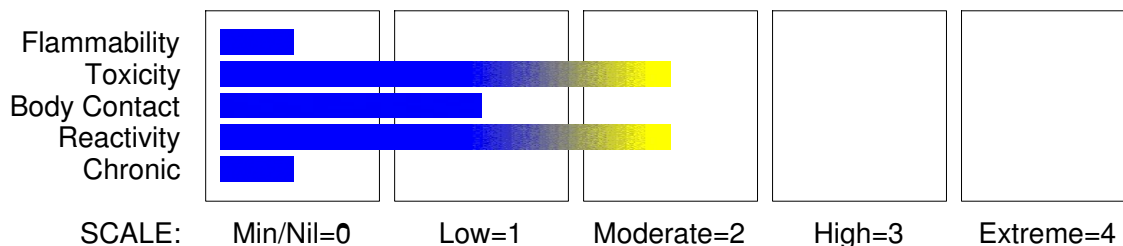
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HAZARD RATINGS



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Section 2 - HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

HAZARD

Not hazardous

No hazards determined by using GHS criteria

PRECAUTIONARY STATEMENTS

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
ammonium bicarbonate	1066-33-7	>99
NOTE Decomposes in moist air/ water to produce ammonia	1336-21-6	

Section 4 - FIRST AID MEASURES

SWALLOWED

- For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Transport to hospital or doctor without delay.

EYE

- If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
 - If pain persists or recurs seek medical attention.
 - Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

- If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).
 - Seek medical attention in event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.

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Section 4 - FIRST AID MEASURES

- Lay patient down. Keep warm and rested.
- Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.
- Transport to hospital, or doctor.

NOTES TO PHYSICIAN

For acute or short term repeated exposures to ammonia and its solutions:

- Mild to moderate inhalation exposures produce headache, cough, bronchospasm, nausea, vomiting, pharyngeal and retrosternal pain and conjunctivitis. Severe inhalation produces laryngospasm, signs of upper airway obstruction (stridor, hoarseness, difficulty in speaking) and, in excessively, high doses, pulmonary oedema.
- Warm humidified air may soothe bronchial irritation.
- Test all patients with conjunctival irritation for corneal abrasion (fluorescein stain, slit lamp exam)
- Dyspneic patients should receive a chest X-ray and arterial blood gases to detect pulmonary oedema.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Water spray or fog.

Foam.

Dry chemical powder.

Carbon dioxide.

FIRE FIGHTING

Alert Fire Brigade and tell them location and nature of hazard.

- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.

DO NOT approach containers suspected to be hot.

If safe to do so, remove containers from path of fire.

Cool fire exposed containers with water spray from a protected location.

Equipment should be thoroughly decontaminated after use.

FIRE/EXPLOSION HAZARD

- Non combustible.
- Not considered a significant fire risk, however containers may burn.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

Clean up all spills immediately.

Avoid contact with skin and eyes.

Wear impervious gloves and safety glasses.

Use dry clean up procedures and avoid generating dust.

Place in clean drum then flush area with water.

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Section 6 - ACCIDENTAL RELEASE MEASURES

MAJOR SPILLS

Moderate hazard.

Clear area of personnel and move upwind.

Alert Fire Brigade and tell them location and nature of hazard.

- Wear full body protective clothing with breathing apparatus.

- Prevent, by any means available, spillage from entering drains or water courses.

No smoking, naked lights or ignition sources.

Increase ventilation.

absorb vapour.

Absorb or cover spill with sand, earth, inert material or vermiculite.

Collect recoverable product into labelled containers for recycling.

Collect residues and seal in labelled drums for disposal.

Wash area down with large quantity of water and prevent runoff into drains.

After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

If contamination of drains or waterways occurs, advise emergency services.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:

ammonium bicarbonate 200 mg/m³

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:

ammonium bicarbonate 40 mg/m³

other than mild, transient adverse effects without perceiving a clearly defined odour is:

ammonium bicarbonate 6 mg/m³

The threshold concentration below which most people will experience no appreciable risk of health effects:

ammonium bicarbonate 2 mg/m³

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS



+



+



+



+



+



+

+: May be stored together

O: May be stored together with specific precautions

X: Must not be stored together

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Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid all personal contact, including inhalation.
Avoid breathing mist and vapour, especially at high temperatures.
Wear protective clothing when risk of exposure occurs.
Avoid smoking, naked lights, heat or ignition sources.
Use in a well-ventilated area.
Avoid contact with incompatible materials.
When handling, DO NOT eat, drink or smoke.
Keep containers securely sealed when not in use.
Avoid physical damage to containers.
Always wash hands with soap and water after handling. Work clothes should be laundered separately.
Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.
Use good occupational work practice. Observe manufacturer's storing and handling recommendations.

SUITABLE CONTAINER

Glass container.
Polyethylene or polypropylene container.
Polylined drum.
• Check that containers are clearly labelled.
Packaging as recommended by manufacturer.

STORAGE INCOMPATIBILITY

Avoid storage with acids, alkalis, oxidising and reducing materials.

STORAGE REQUIREMENTS

Observe manufacturer's storing and handling recommendations.
Store in original containers.
Keep containers securely sealed.
No smoking, naked lights, heat or ignition sources.
Store in a cool, dry place.
Store in a well-ventilated area.
Store away from incompatible materials.
DO NOT store in pits, depressions, basements or areas where vapours may be trapped.
Protect containers against physical damage.
Check regularly for spills and leaks.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- ammonium bicarbonate:
- ammonia:

CAS:1066- 33- 7 CAS:758- 14- 5 CAS:114459- 02- 8
CAS:1336- 21- 6 CAS:178115- 93- 0 CAS:125888-
87- 1 CAS:16393- 49- 0 CAS:132103- 60- 7

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

CAS:7664- 41- 7

EMERGENCY EXPOSURE LIMITS

Material	Revised IDLH Value (mg/m3)	Revised IDLH Value (ppm)
ammonia		300

ODOUR SAFETY FACTOR (OSF)

OSF=3.8 (AMMONIA)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold Value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV- TWA for example) is being reached, even when distracted by working activities
B	26- 550	As " A" for 50- 90% of persons being distracted
C	1- 26	As " A" for less than 50% of persons being distracted
D	0.18- 1	10- 50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As " D" for less than 10% of persons aware of being tested

MATERIAL DATA

#33nd#33nda

Data for decomposition product.

PERSONAL PROTECTION



EYE

- Chemical goggles.
- Full face shield.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and

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Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].

HANDS/FEET

Rubber gloves.
Rubber boots.
Safety footwear.

OTHER

Overalls.
· Impervious protective clothing.
Ensure there is ready access to a safety shower.
· Eyewash unit.

RESPIRATOR

Protection Factor	Half- Face Respirator	Full- Face Respirator	Powered Air Respirator
10 x ES	P1 Air- line*	- -	PAPR- P1 -
50 x ES	Air- line**	P2	PAPR- P2
100 x ES	-	P3	-
		Air- line*	-
100+ x ES	-	Air- line**	PAPR- P3

* - Negative pressure demand ** - Continuous flow.

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
For further information consult your
Occupational Health and Safety Advisor.

ENGINEERING CONTROLS

Local exhaust ventilation may be required for safe working, i.e. to keep exposures below required standards, otherwise PPE is required.
If risk of overexposure exists, wear SAA approved respirator.
Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Colourless to white solid with faint odour of ammonia. Soluble in water, insoluble in alcohol. Comparatively stable at room temperature. Decomposes at temperatures above 36 deg.C and evolves highly irritating fumes of ammonia.

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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.

Mixes with water.

Molecular Weight: 96.11

Melting Range (°C): 35- 60 Decomposes

Solubility in water (g/L): Miscible

pH (1% solution): Not available.

Volatile Component (%vol): Not available.

Relative Vapour Density (air=1): 0.60 (ammonia).

Lower Explosive Limit (%): Not available.

Autoignition Temp (°C): Not available.

State: Divided solid

Boiling Range (°C): 60 (Decomposes).

Specific Gravity (water=1): 1.59

pH (as supplied): Not applicable

Vapour Pressure (kPa): 7.80 @ 25 C.

Evaporation Rate: Not available

Flash Point (°C): Not applicable

Upper Explosive Limit (%): Not available.

Decomposition Temp (°C): 35- 60

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

Presence of heat source.

Presence of incompatible materials.

Storage in unsealed containers.

Stable under normal storage conditions.

Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

Considered an unlikely route of entry in commercial/industrial environments.

Human metabolism allows detoxification of ammonia, however toxic effects appear if this mechanism is overwhelmed by other than small doses. Large doses of ammonium salts may produce diarrhoea and may be sufficiently absorbed to produce diuresis and systemic ammonia poisoning. Such poisonings have been described after parenteral administration of the salts and produce flaccidity of facial muscles, tremor, generalised discomfort, anxiety and impairment of motor performance, recognition and of critical flicker fusion. Such a clinical picture resembles that found in terminal liver failure - elevated levels of ammonia are found regularly in advanced liver disease.

EYE

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).

The dust may produce eye discomfort causing transient smarting, blinking.

SKIN

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless,

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Section 11 - TOXICOLOGICAL INFORMATION

good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

INHALED

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Inhalation hazard is increased at higher temperatures.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are by accidental skin and eye contact and inhalation of generated dusts.
No human exposure data available. For this reason health effects described are based on experience with chemically related materials.
As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

TOXICITY

Intravenous (mouse) LD50: 245 mg/kg

IRRITATION

Nil Reported

Section 12 - ECOLOGICAL INFORMATION

No data

Section 13 - DISPOSAL CONSIDERATIONS

Recycle wherever possible.
Consult manufacturer for recycling options.
Consult State Land Waste Management Authority for disposal.
Treat and neutralise at an effluent treatment plant.
Decontaminate empty containers with dilute acid.
Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS:UN, IATA,
IMDG

Section 15 - REGULATORY INFORMATION

REGULATIONS

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Section 15 - REGULATORY INFORMATION

ammonium bicarbonate (CAS: 1066-33-7) is found on the following regulatory lists;
CODEX General Standard for Food Additives (GSFA) - Additives Permitted for Use in Food
in General, Unless Otherwise Specified, in Accordance with GMP
International Council of Chemical Associations (ICCA) - High Production Volume List
OECD Representative List of High Production Volume (HPV) Chemicals

No data available for ammonium bicarbonate as CAS: 758-14-5, CAS: 114459-02-8.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
ammonium bicarbonate	1066- 33- 7, 758- 14- 5, 114459- 02- 8
ammonia	1336- 21- 6, 178115- 93- 0, 125888- 87- 1, 16393- 49- 0, 132103- 60- 7

The above information is believed to be accurate and represent the best information currently available to us, but does not represent any warranty expressed or implied of the properties of the product. User should make their own investigation to determine the suitability of the information for their particular purpose.

Issue Date: 12-May-2018