



KOCH FERTILIZER CANADA LTD

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Koch Fertilizer Canada Ltd.
1400 17th Street East
Brandon, MB R7A 7C4
1-204-729-2898

SPILL/EMERGENCY CONTACT:
CHEMTREC: 1-800-424-9300 (U.S.)
CANUTEC: 613-996-6666 (Canada, call collect)
Emergency Response Assistance Plan:
1-204-729-2999
To Request An MSDS: 1-316-828-7672

MSDS NUMBER: 232059

TRADE NAMES:
ANHYDROUS AMMONIA

SYNONYMS:
AMMONIA, 82-0-0, NH₃

CHEMICAL FAMILY: inorganic, alkaline gas or liquid

PRODUCT USE: agricultural

REVISION DATE: Sep 01 2006

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: AMMONIA, ANHYDROUS
CAS NUMBER: 7664-41-7
PERCENTAGE: 99.7

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=3 FIRE=1 REACTIVITY=0



EMERGENCY OVERVIEW:
SIGNAL WORD: DANGER!

MAJOR HEALTH HAZARDS: harmful if swallowed, harmful or fatal if inhaled, respiratory tract burns, skin burns, eye burns, blindness, frostbite (from compressed gas)

PHYSICAL HAZARDS: Containers may rupture or explode if exposed to heat. May react on contact

with water.

POTENTIAL HEALTH EFFECTS:**INHALATION:**

SHORT TERM EXPOSURE: burns, lung congestion, sore throat, cough, difficulty breathing, chest pain, nausea, vomiting, headache, kidney damage, nerve damage, death

LONG TERM EXPOSURE: kidney damage, nerve damage, burns

SKIN CONTACT:

SHORT TERM EXPOSURE: burns, frostbite

LONG TERM EXPOSURE: burns

EYE CONTACT:

SHORT TERM EXPOSURE: burns, frostbite, eye damage, blindness

LONG TERM EXPOSURE: burns, eye damage

INGESTION:

SHORT TERM EXPOSURE: Ingestion is not a route of exposure.

LONG TERM EXPOSURE: Ingestion is not a route of exposure.

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Do not attempt rescue in confined spaces without adequate protective gear and proper training. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15-20 minutes). Place contaminated clothing in a closed container until laundered or discarded. Contaminated clothing should be removed and laundered before reuse. Notify person laundering clothing of contaminant's hazardous properties. Discard contaminated leather goods. If frostbite or freezing occur, immediately flush with plenty of lukewarm water (105-115 F; 41-46 C). DO NOT USE HOT WATER. If warm water is not available, gently wrap affected parts in blankets. Get immediate medical attention.

EYE CONTACT: Immediately flush eyes with plenty of water for at least 30 minutes. Hold eyelids away from the eyeball to ensure thorough rinsing. Get immediate medical attention.

INGESTION: Ingestion is not a route of exposure.

NOTE TO PHYSICIAN: Signs and symptoms of CNS depression, confusion and convulsions should be considered in the assessment and treatment of victims of exposure.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Slight fire hazard. Moderate explosion hazard. Containers may rupture or explode if exposed to heat.

EXTINGUISHING MEDIA: carbon dioxide, regular dry chemical

Large fires: Use regular foam or flood with fine water spray. If water is used, a minimum of 100 volumes of water must be available for each volume of ammonia.

FIRE FIGHTING: Do not get water inside container. Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Keep unnecessary people away, isolate hazard area and deny entry. Stop flow of gas. Use extinguishing agents appropriate for surrounding fire. Be aware that a BLEVE (Boiling Liquid Expanding Vapor Explosion) may occur unless surfaces are kept cool with water. Flood with fine water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Consider downwind evacuation if material is leaking.

SENSITIVITY TO MECHANICAL IMPACT: No

SENSITIVITY TO STATIC DISCHARGE: No

FLASH POINT: not flammable

LOWER FLAMMABLE LIMIT: 16%

UPPER FLAMMABLE LIMIT: 25%

AUTOIGNITION: 1562 F (850 C)

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition products or combustion: ammonia, oxides of nitrogen, hydrogen

6. ACCIDENTAL RELEASE MEASURES

WATER RELEASE:

Keep out of water supplies and sewers.

OCCUPATIONAL RELEASE:

Stop leak if possible without personal risk. Reduce vapors with water spray. Do not get water directly on material. Do not get water inside container. Keep unnecessary people away, isolate hazard area and deny entry. Small spills: Flood with water. Evacuation radius: 100 feet Large spills: Dike for later disposal. Stay upwind and keep out of low areas. Ventilate closed spaces before entering. Evacuation radius: 200 feet Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.101. U.S. OSHA 29 CFR 1910.111. Notify State Emergency Response Commission for storage or use at amounts greater than or equal to the TPQ (U.S. EPA SARA Section 302). SARA Section 303 requires facilities storing a material with a TPQ to participate in local emergency response planning (U.S. EPA 40 CFR 355.30). Keep separated from incompatible substances. Store outside or in a detached building. Store in a cool, dry, well ventilated area of non-combustible construction. Keep away from sources of ignition. Protect from physical damage.

HANDLING: Do not cut, puncture, or weld on or near this container. When using, do not eat, drink or

smoke. Subject to handling regulations: U.S. OSHA 29 CFR 1910.119. U.S. OSHA 29 CFR 1910.111.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

AMMONIA, ANHYDROUS:

50 ppm (35 mg/m³) OSHA TWA

35 ppm (27 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

25 ppm ACGIH TWA

35 ppm ACGIH STEL

VENTILATION: General or local exhaust ventilation and other forms of engineering controls are the preferred means for controlling exposures. If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Contact lenses should not be worn. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

PROTECTIVE MATERIAL TYPES: butyl rubber, neoprene, nitrile butadiene rubber (NBR), polyvinyl chloride (PVC)

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: 300 ppm

RESPIRATOR: A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits. Appropriate respirator selection should be made by a qualified professional as part of a comprehensive respiratory protection program as described in 29 CFR 1910.134. Protection provided by air-purifying respirators is limited and should not be used in atmospheres deficient in oxygen or where airborne concentrations are immediately dangerous to life or health. Use a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air-purifying respirators may not provide adequate protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: gas

APPEARANCE: clear

COLOR: colorless

PHYSICAL FORM: compressed, liquefied gas

ODOR: pungent odor, irritating odor

MOLECULAR WEIGHT: 17.03

MOLECULAR FORMULA: N-H₃

BOILING POINT: -28.1 F (-33.4 C)

FREEZING POINT: Not available

VAPOR PRESSURE: 92.9 psig @ 15.6 C

VAPOR DENSITY: Not available

SPECIFIC GRAVITY (water=1): 0.68 @ -33.4 C
WATER SOLUBILITY: soluble
PH: >13
VOLATILITY: 100%
ODOR THRESHOLD: Not available
EVAPORATION RATE: Not applicable
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not applicable

10. STABILITY AND REACTIVITY

REACTIVITY: May react with evolution of heat on contact with water.

CONDITIONS TO AVOID: Minimize contact with material. Avoid inhalation of material or combustion by-products. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: acids, bromine, calcium, chlorine, hypochlorite, iodine, mercury, oxidizing materials, silver

HAZARDOUS DECOMPOSITION:

Thermal decomposition products or combustion: ammonia, oxides of nitrogen, hydrogen

Thermal decomposition products: Decomposition temperature may be lowered to 575 F by contact with certain metals, such as nickel.

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

ANHYDROUS AMMONIA:

TOXICITY DATA:

2000 ppm/4 hour(s) inhalation-rat LC50; 350 mg/kg oral-rat LD50

LOCAL EFFECTS:

Corrosive: inhalation, skin, eye, ingestion

ACUTE TOXICITY LEVEL:

Toxic: ingestion

Moderately Toxic: inhalation

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: diabetes, eye disorders, liver disorders, nervous system disorders, kidney disorders, respiratory disorders, skin disorders and allergies

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

FISH TOXICITY: 21.4 - 279 mg (total NH₃/L) 96 hour LC50 Fish 735 mg (total NH₃/L) 48 hour LC50 Daphnia

FATE AND TRANSPORT:

BIODEGRADATION: This substance will promote algae growth which may degrade water quality and taste.

13. DISPOSAL CONSIDERATIONS

Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D002. Dispose in accordance with all applicable regulations.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Ammonia, anhydrous

ID NUMBER: UN1005

HAZARD CLASS OR DIVISION: 2.2

LABELING REQUIREMENTS: 2.2

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: Forbidden

DOT HAZARDOUS SUBSTANCE(S):

Ammonia 100 lb(s) (45.4 kg(s))



INTERNATIONAL U.S. DOT 49 CFR 172.101:

PROPER SHIPPING NAME: Ammonia, anhydrous

ID NUMBER: UN1005

HAZARD CLASS OR DIVISION: 2.3

LABELING REQUIREMENTS: 2.3; 8

QUANTITY LIMITATIONS:

PASSENGER AIRCRAFT OR RAILCAR: Forbidden

CARGO AIRCRAFT ONLY: Forbidden



CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

SHIPPING NAME: Anhydrous ammonia

UN NUMBER: UN1005

CLASS: 2.2; 8

15. REGULATORY INFORMATION

U.S. REGULATIONS:

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

AMMONIA, ANHYDROUS: 100 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.30):

AMMONIA, ANHYDROUS: 500 LBS TPQ

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355.40):

AMMONIA, ANHYDROUS: 100 LBS RQ

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: Yes

CHRONIC: Yes

FIRE: No

REACTIVE: No
SUDDEN RELEASE: Yes

SARA TITLE III SECTION 313 (40 CFR 372.65):
AMMONIA, ANHYDROUS

OSHA PROCESS SAFETY (29CFR1910.119):
AMMONIA, ANHYDROUS: 10000 LBS TQ

CLEAN AIR ACT: This product contains one or more components listed as a hazardous air pollutant under Title III of the Clean Air Act Amendment of 1990.

STATE REGULATIONS:

California Proposition 65: Not regulated.

NEW JERSEY WORKER AND COMMUNITY RIGHT TO KNOW: This MSDS was prepared in accordance with the New Jersey Worker and Community Right-to-Know Act.

PENNSYLVANIA RIGHT TO KNOW: This MSDS was prepared in accordance with the Pennsylvania Worker and Community Right-to-Know Act.

CANADIAN REGULATIONS:

CONTROLLED PRODUCTS REGULATIONS (CPR): This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

WHMIS CLASSIFICATION: A, D1A, E.

NATIONAL INVENTORY STATUS:

U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDL): Listed on DSL.

16. OTHER INFORMATION

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.