



G.K. Chemical Specialties Co. Inc.
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SAFETY DATA SHEET (SDS)

PRODUCT NAME: G-28 CLEAR AMMONIA	
HEALTH HAZARD RATING:	(3)- SERIOUS HAZARD NFPA Rating
FLAMMABILITY HAZARD RATING:	(0)- MINIMAL HAZARD
REACTIVITY HAZARD RATING:	(1)- SLIGHT HAZARD
PERSONAL PROTECTION:	h - (Splash goggles, Gloves, Synthetic apron, Vapor respirator)
HAZARD ALERT SIGN:	

SECTION 1 – IDENTIFICATION	
PRODUCT IDENTIFIER	
PRODUCT NAME	G-28 CLEAR AMMONIA
MANUFACTURER'S NAME AND ADDRESS EMERGENCY PHONE NO.	G.K. Chemical Specialties Co. Inc. 90 Barbados Blvd. Scarborough, Ontario M1J 1K9 (416) 261-7182 / 905 427-7605/ 416-526-4037 CHEMTREC(24 HR EMERGENCY) 1-800-424-9300 International CHEMTREC: 1-703-527-3887
SUPPLIER'S NAME AND ADDRESS EMERGENCY PHONE NO.	
CHEMICAL NAME	NH ₃ OH (Ammonium Hydroxide) solution
CHEMICAL FAMILY	NOT APPLICABLE
TRADE NAME AND SYNONYMS	Ammonia Hydrate, Aqueous ammonia
MATERIAL USE	COMMERCIAL, INSTITUTIONAL AND INDUSTRIAL CLEANING

G.K. Chemical Specialties Co. Inc. has compiled the information and recommendations contained in this Safety Data Sheet from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the SDS was prepared. Although reasonable precautions have been taken in the preparation of the data contained herein, it is offered solely for your information, consideration and investigation.

G.K. Chemical Specialties Co. Inc. extends no warranty and assumes no responsibility as to the accuracy of the content or sufficiency of the information and expressly disclaims all liability for reliance thereon. This SDS provides guidelines for the safe handling of this product. It does not and cannot advise on all possible situations, therefore, your specific use of this product should be evaluated to determine if additional precautions are required. Individuals exposed to this product should read and understand this information and be provided pertinent training prior to working with this product.

G.K. Chemical Specialties Co. Inc. assumes no responsibility for personal injury or property damage to vendors, users or third parties caused by the material. Such vendors or users assume all risks associated with the use of the material.

INGREDIENTS. This SDS, under section of Ingredients, contains all ingredients listed under INGREDIENT DISCLOSURE LIST P.C. 1987-2719, 20/1/88 CANADA GAZETTE PART II VOL. 122, No 2 of HAZARDOUS PRODUCT ACT.

Percentage range of concentration of ingredients is expressed as percentage by weight of the total weight of the product. Ingredient List does not necessarily list all ingredients in the formulation and does not necessarily list all ingredient range of concentration, other than ingredients under the Disclosure List.

T.L.V. (units) or Threshold Limit Values refer to the limiting concentrations recommended by the Ministry of Labour. These values were adopted by the American Conference of Governmental Industrial Hygienists (A.C.G.I.H.). The figures refer to time-weighted average concentrations as P.P.M. (V/V) or mg/m³ for a normal working day or at any time for some materials.

"C.A.S REG. No." means the identification number assigned to a chemical substance by the Chemical Abstracts Service Division of the American Chemical Society.

"LC 50" means the concentration of a substance in air that when administered by means of inhalation over a specified length of time in an animal assay, is expected to cause the death of 50 per cent of a defined animal population.

"LD 50" means the single dose of a substance that, when administered by a defined route in an animal assay, is expected to cause death of 50 per cent of a defined animal population.

FLASH POINT. The minimum temperature at which a substance gives off flammable vapors which in contact with spark or flame will ignite.

NIOSH- National institute for occupational safety and health

STEL- Short term exposure limit

TWA- Time-weighted average

PEL- Permissible exposure limit

ACGIH- American conference of governmental industrial hygienist

OSHA- Occupational safety and health act

SECTION 2 – HAZARD IDENTIFICATION

Dangerous Goods: **WHMIS:**CLASS E and Class D. DIV. 2B

GHS CLASSIFICATION

Acute Toxicity (oral) – Category 4
Acute Toxicity (Inhalation)- Category 4
Eye Damage/Irritation–Category 1
Skin Corrosion/Irritation – Category 1A
Toxic to the Aquatic Environment- Acute Hazard – Category 2
Toxic to the Aquatic Environment-Chronic- Category 3

HAZARDOUS SUBSTANCE (HSNO) CLASSIFICATION

Corrosive liquid: CLASS E and CLASS D, DIV 2B
GHS Label Elements, including precautionary statements: Hazard Statements:

Signal word- DANGER

HAZARD STATEMENTS

H314: Causes severe skin burns and eye damage
H318: Causes serious eye damage
H302+ H332: Harmful if swallowed or if inhaled.
H335: May cause respiratory irritation.
H400: Very toxic to aquatic life.
H412: Harmful to aquatic life with long lasting effects.

PREVENTION

P261: Avoid breathing dust/fumes/gas/mist/vapors/spray
P271: Use only outdoors or in a well-ventilated area
P264: Wash skin thoroughly after handling
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection
P405: Store locked up
P273: Avoid release to the environment

RESPONSE

P305+P351+P338- IF IN EYES: Rinse cautiously with water for several minutes: Remove contact lenses if present and easy to do so. Continue rinsing.
P301 + P310: If swallowed: Immediately call a POISON CENTER or doctor/ physician.
P301 + P330 + P331” IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P304 +P340 + P310: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/physician
P303 + P361 + P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water. Shower

POTENTIAL HEALTH EFFECTS

INHALATION: If mist is inhaled may be harmful. Can cause respiratory tract irritation and inflammation.

SKIN: May cause skin irritation and/or chemical burns.

EYE: May cause serious damage

INGESTION: Corrosive- May cause severe pain in the mouth, chest, and abdomen, leading to cough, vomiting and collapse.



NOTE: After removing the cap from the bottle do not try to smell the product. Ammonium hydroxide is very volatile and releases Ammonia as gas which will cause severe irritation of the eyes and respiratory system.

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS INGREDIENTS	APPROXIMATE CONCENTRATION %	C.A.S., N.A. OR U.N. NUMBERS	LD50 {SPECIFY SPECIES & ROUTE}	LC 50 {SPECIFY SPECIES}
Ammonium Hydroxide 26 ^o Be Ammonia as NH ₃ 29-30 %	25 - 35	1336-21-6	Oral(Rat): 350 mg/kg	ACGIH TLV-TWA: 25 ppm as NH₃ LC50 Inhalation Rat= 5.1 mg/l/1 h 2000 ppm/4 h As NH₃
Water	Balance	7732-18-5		
COMPOSITION Anhydrous Ammonia as NH ₃	7.5 – 10.5	7664-41-7		
Water	Balance	7732-18-5		

SECTION 4 – FIRST AID MEASURES

SKIN CONTACT	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and wash using soap. Get medical attention if necessary.
EYE CONTACT	Immediately hold eyelids open and flush with water for at least 15 minutes. Seek medical attention.
INHALATION	Move casualty to fresh air and keep at rest. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention if necessary
INGESTION	Harmful if swallowed. Do not induce vomiting. Drink 1 or 2 glasses of water. Seek immediate medical attention. Never give anything by mouth to an unconscious or convulsing person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
NOTES TO PHYSICIAN	<p>Product is corrosive material to eyes, respiratory system and skin. Harmful if inhaled or swallowed. INHALATION: Symptoms may include: Sneezing, coughing, burning sensation of throat with constricting sensation of the larynx and difficulty in breathing. Damage to lungs. Persons with impaired pulmonary function may be at increased risk from exposure.</p> <p>INGESTION: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. EYE CONTACT: Causes serious eye damage. Symptoms may include: Redness, pain, blurred vision, severe burns. Can cause permanent damage to the cornea, iris, or conjunctiva. SKIN CONTACT: Corrosive. Causes burns. Symptoms may include: Redness, pain, serious skin burns, and blisters.</p> <p>Emergency medical care: Pulmonary edema may be delayed. Medical conditions that may be aggravated by exposure include asthma, bronchitis, emphysema and other lung diseases and chronic nose, sinus or throat conditions. In the event of skin or eye contact, rapid and thorough flushing is essential.</p>

SECTION 5 – FIRE-FIGHTING MEASURES	
FLASH POINT (°C)	Not flammable
FLASH POINT METHOD	Not applicable
AUTOIGNITION TEMPERATURE (°C)	651°C (Ammonia vapor)
UPPER FLAMMABLE LIMIT (% VOL.)	25 % (Ammonia vapor)
LOWER FLAMMABLE LIMIT (% VOL.)	16 % (Ammonia vapor)
HAZARDOUS COMBUSTION PRODUCTS	Carbon oxides (CO, CO ₂), Nitrogen oxides. Emits Ammonia vapors
UNUSUAL FIRE/ EXPLOSION HAZARDS	The presence of oil or other combustibles will increase the fire hazard.
SENSITIVITY TO MECHANICAL IMPACT	No.
SENSITIVITY TO STATIC DISCHARGE	No
EXTINGUISHING MEDIA	Use extinguishing agents appropriate for the burning material. Use water spray to keep fire-exposed containers cool
SPECIAL FIRE FIGHTING PROCEDURES	Fire fighters should wear full protective clothing, including self-contained breathing equipment. The product causes burns of eyes, skin and mucous membranes. Thermal decomposition can lead to release of Oxides of Carbon, Oxides of Nitrogen, Ammonia gas

SECTION 6 – ACCIDENTAL RELEASE MEASURES	
LEAK AND SPILL PROCEDURE	Stop leak. Move containers from spill area. Absorb spill with vermiculite absorbent material, neutralize the residue with a dilute solution of Hydrochloric acid or Phosphoric and place in a suitable container for disposal. Clean surfaces thoroughly with water to remove residual contamination. LARGE SPILL: Corrosive liquid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to knock down vapor drift. Neutralize the residue. Be careful that vapors are not present at a concentration level above TLV
ENVIRONMENTAL PRECAUTIONARY	Prevent entry into sewers or streams. Any release to the environment should be subject to federal or local reporting requirements.
PERSONAL PRECAUTIONARY MEASURES	Wear protective clothing during cleanup. See section 8 for recommendations on the use of personal protective equipment. Avoid breathing vapors, mist or gas. Avoid contact with clothing and skin

SECTION 7 – HANDLING AND STORAGE	
HANDLING PROCETURES	Avoid contact with eyes and skin. Avoid ingestion. Avoid inhalation. Use good industrial hygiene practices in handling this product.
STORAGE NEEDS	Keep container tightly closed. Store in a cool area above freezing point. Keep out of the reach of children. Keep in properly labeled containers. Store in Polyethylene, stainless steel or glass containers. Store away from oxidizing agents and strong acids.

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION	
VENTILATION REQUIREMENTS	Good ventilation is recommended. When TLV (Threshold Limit Value is greater than 25ppm (40 mg/ m ³) as Anhydrous Ammonia provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective. Control Parameters for

	Anhydrous Ammonia (7664-41-7) : USA ACGIH-TWA =25 ppm, USA ACGIH- STEL= 36 ppm, USA OSHA PEL (TWA)= 25 mg/m ³ (50 ppm), USA IDLE= 300ppm. Above figures are similar to the provinces of Canada
PROTECTIVE EQUIPMENT	Ensure that eyewash stations are proximal to the work-station location. The selection of personal protective equipment will vary depending on the condition of use
EYE/TYPE	Splash goggles, safety glasses
RESPIRATORY/TYPE	Approved/ certified vapor respirator when airborne concentration exceed exposure limits.
GLOVE/TYPE	Nitrile, Vinyl, Butyl impervious gloves
FOOTWEAR/TYPE	Boots. Chemical resistant and as specified by the workplace
BODY/TYPE	Protective clothing is required. Use impervious clothing (apron, coveralls). The selection of personal protective equipment will vary depending on the conditions of use.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE – PHYSICAL STATE	Thin clear liquid
ODOUR	Pungent Ammonia odour
ODOUR THRESHOLD (PPM)	1-50 ppm
PH	12-14 concentrate, 10.6-11.6 for 2 % aqueous Ammonia solution
MELTING POINT (°C)	See freezing point
BOILING POINT (°C)	>100°C (212° F) INITIAL
FREEZING POINT (°C)	< 0°C (32° F)
EVAPORATION RATE	>1.00 (n-Butyl Acetate)
FLAMMABILITY	Not combustible
FLASH POINT (°C)	Not applicable
AUTO IGNITION TEMPERATURE	651° C For NH ₃
DECOMPOSITION TEMPERATURE	300°C (572°F) for NH ₃
VAPOUR DENSITY	(air= 1) 0.6 @ 0°C (32° F)
VAPOUR PRESSURE	@ 27°C 720 mmHg
SOLUBILITY	Completely soluble in water
VISCOSITY	Thin liquid
% VOLATILE BY VOLUME	100 %
SPECIFIC GRAVITY	0.96 ± 0.02 gm / cm ³ @ 20°C

SECTION 10 – STABILITY AND REACTIVITY	
REACTIVITY	May form explosive compounds with Calcium Hypochloride, bleaches, Mercury, Chlorine and other Halogens.
CHEMICAL STABILITY	Stable under normal conditions
POSSIBILITY OF HAZARDOUS REACTIONS	See Reactivity section above
CONDITIONS TO AVOID	Avoid incompatible materials
INCOMPATIBLE MATERIALS	Avoid contact with strong oxidizers, chlorine, bromine, iodine, calcium hypochloride. Corrosive to copper, brass, silver, zinc and galvanized steel
HAZARDOUS DECOMPOSITION PRODUCTS	Combustion of Ammonia will yield small amounts Nitrogen oxides

SECTION 11 – TOXICOLOGICAL INFORMATION	
TOXICITY EFFECTS ON ANIMALS	Acute oral toxicity (LD50): 350 mg/kg (Rat), LD50- Inhalation (mouse) : 2115 ppm (4 hour). ACGIHTLV-TWA: 25 ppm as NH ₃
TOXIC EFFECTS ON HUMANS	Inhalation: May cause chemical burns to the respiratory tract, leading to sore throat, coughing, shortness of breath and delayed lung edema. Acute overexposure can cause serious nervous system depression. Can cause allergic respiratory or asthma- like reaction Ingestion: May cause circulatory system failure. Causes severe digestive tract burns with abdominal pain, vomiting, and possible death. May cause corrosion and permanent tissue destruction of the esophagus and digestive tract. Skin contact: May cause skin sensitization, an allergic reaction, which becomes evident upon re-exposure to this material. Contact with this corrosive liquid may cause burns and ulceration. Eye contact: May cause severe eye injury.
CHRONIC EFFECTS ON HUMANS	Prolonged contact with skin may defat tissue causing dermatitis or skin problems.
CARCINOGENICITY	No evidence
TERATOGENICITY	No data available however no effects are anticipated
MUTAGENICITY	No evidence
REPRODUCTIVE EFFECTS	No evidence

SECTION 12 – ECOLOGICAL INFORMATION	
ECOTOXICITY DATA	Harmful to aquatic life even in low concentrations. Anhydrous Ammonia (7664-41-7) : LC50 FISH (Cyprinus carpio)=0.44 mg/L/96 h. LC50 FISH (Lepomis macrochirus)=0.26-4.6 mg/L/96 h. EC50 (Daphnia magna)=25.4 mg/ L/ 48 h. The most sensitive known aquatic group of this product is Daphnia pulex. EC50 as Ammonium hydroxide (1336-21-6)= 0.66 mg /L / 48 h
BIODEGRADABILITY	Does not bioaccumulate. This product is completely biodegradable. Biodegradation of Ammonia occurs in water under aerobic conditions. Biological Oxygen Demand (BOD): None.
PRODUCTS OF DEGRADATION	No data

SECTION 13 – DISPOSAL CONSIDERATIONS	
WASTE DISPOSAL	Disposal of all wastes must be done in accordance with municipal, provincial and federal regulations. This product is hazardous to the aquatic environment. Keep out of waterways. Reclaim as fertilizer if possible.
INFORMATION ON SAFE HANDLING FOR DISPOSAL INCLUDING ANY CONTAMINATED PACKAGING	Suitable waste facility.

SECTION 14 – TRANSPORT INFORMATION	
UN NUMBER	UN2672
UN PROPER SHIPPING NAME	AMMONIA SOLUTIONS (with more than 10 % but not more than 35 % Ammonia)
TRANSPORT HAZARD CLASS	CLASS: 8 (CORROSIVE)
PACKAGING GROUP	III
ENVIRONMENTAL HAZARDS	YES
TRANSPORT IN BULK, if applicable	NOT AVAILABLE
SPECIAL PRECAUTIONS	Guide to Canadian Transportation/ Emergency Response Guidebook: # 154

SECTION 15 – REGULATORY INFORMATION	
SAFETY HEALTH & ENVIRONMENTAL REGULATIONS SPECIFIC TO THE PRODUCT	U.S. TSCA inventory Status: All components of this product are either on the Toxic Substances Control Act (TSCA) INVENTORY List or exempt. Canadian DSL Inventory Status: All components of this product are either on the Domestic Substances List (DSL) or the Non-Domestic Substances List (NDSL) or exempt.

SECTION 16 – OTHER INFORMATION	
PREPARED BY:	Gus Kaklamanos - Chemist
TELEPHONE NO.:	416-261-7182
DATE OF THE LATEST REVISION OF SDS:	October 2, 2017

NOTE: A lot of the information provided in this SDS may refer to very large or special usage of the product. The basic purpose of this product is to be used as a cleaner, where quantities stored and used at any time by various users are very small.