



Safety Data Sheet

4UF

GAS DRY ULTIMATE Chemical Desiccant



Section 1 – Product and Company Information

Date: June 22, 2016 Rev. A

Product Name: 4UF / Gas Dry ULTIMATE Chemical Desiccant
Chemical Family: Mixture
Catalog Numbers: 33-0416
Product Use: Industrial: Deliquescent desiccant to reduce moisture content of Compressed Natural Gas, Compressed Air and other Compressed Gasses

Company Identification: Van Air Systems / Van Gas Technologies
 2950 Mechanic Street, Lake City, PA USA
 16423-2095
 E-mail: info@vanairsystems.com
www.vanairsystems.com / www.vangastech.com
 Telephone: (814) 774-2631

Emergency Telephone Number call Chemtel: US, Canada, Puerto Rico **1-800-255-3924** (Van Air)
 International **+01-813-248-0585** (Van Air)

Customer Service Telephone Number: 814-774-2631

Section 2 – Hazard Identification

Color: White to gray-white
Physical state: Solid bullet shaped tablet
Odor: Odorless

Classification of substance or mixture:
 GHS Classification [EC Regulation No 1272/2008 and US OSHA regulations]
 Acute Toxicity, Category 4
 Serious Eye Damage, Category 1
 Skin Corrosion Irritant, Category 2
 Skin sensitizer, Category 1

Emergency Overview:

Prevention: P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
 P264: Wash hands thoroughly after handling.
 P270: Do not eat, drink or smoke when using this product.
 P272: Contaminated work clothing should not be allowed out of the workplace.
 P280: Wear protective gloves/eye protection/face protection.

Response: P301+P312: IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell.
 P330: Rinse mouth.
 P302+P352: IF ON SKIN: Wash with plenty of water.
 P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
 P362+P364: Take off contaminated clothing and wash it before reuse.
 P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 P310: Immediately call a POISON CENTER/doctor.

Disposal: P501: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None Identified.

Signal Words:
Hazard Pictogram:

Danger



Potential Health Effects:

H302: Harmful if swallowed.
H315: Causes skin irritation.
H317: May cause an allergic skin reaction.
H318: Causes serious eye damage.

Health Hazards (acute and chronic):

Carcinogenicity: None known.
NTP: Not available
IARC Monographs: Not available

Signs and Symptoms of Exposure:

Skin dryness due to desiccant action. Ingestion of large amounts may cause vomiting, diarrhea and prostration.

Section 3 – Composition / Information on Ingredients

Chemical name	CAS number	Percent by Weight
Calcium bromide	7789-41-5	50 - 60%
Lithium bromide	Confidential	20 - 30%
Ethylene glycol	107-21-1	10 - 20%
Lithium chloride	7447-41-8	5 - 10%

Mixtures

Trade secret information:

A specific chemical identity and/or percentage of composition has been withheld as a trade secret.

Section 4 - First Aid Measures

Eyes: **Immediately** call a POISONCENTER /doctor/ Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Skin: Remove contaminated clothing / shoes and wash before reuse. Wash with soap and water. Treat for dry skin. If skin irritation or rash occurs: Get medical attention.

Inhalation: Move person to fresh air. If irritation persists, consult a Physician. If skin irritation or rash occurs: Get medical attention. Launder contaminated clothing before reuse.

Ingestion: Consult POISON CENTER/ Doctor if you feel unwell. Do NOT induce vomiting unless directed to do so. If victim is conscious and alert, give 1-2 glasses of water.

Treatment: Treat symptomatically.

Section 5 – Fire Fighting Measures

Flammable Properties:

Non-flammable

Flash Point:	Not applicable.
Method Used:	Not applicable
Flammability Limits:	No data available
LEL:	No data available
UEL:	No data available
Fire Fighting Instructions:	When heated, hazardous gases may be released including: hydrogen chloride and chlorine. A solid stream of water will spread the burning material. Material creates a special hazard because it floats on water. See section 10 for additional information.
Extinguishing Media:	No data available
Unusual Fire and Explosion Hazards:	None known
Special Equipment for Fire Fighters:	Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

Section 6 – Accidental Release Measures

Personal precautions, protective equipment and emergency procedures:	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. See Section 8 of the SDS for Personal Protective Equipment.
Environmental Precautions:	Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.
Methods and material for containment and cleaning up:	Pick up free solid for recycle and/or disposal. Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas.

Section 7 – Handling and Storage

Handling:	Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse.
Storage:	Store away from incompatible materials. See section 10 for incompatible materials. Observe all applicable laws when storing this product. Store in cool dry place. Keep away from strong acids. Keep containers tightly closed since material is hygroscopic. Repair damaged containers. Wash thoroughly after handling.

Section 8 – Exposure Controls and Personal Protection

Engineering controls:	Provide good local ventilation (10 changes per hour). Facility must be equipped with quick drench eye wash station and safety shower.
Exposure Limits:	None listed
Personal Protective Equipment (PPE)	

Respirators:	Use NIOSH, EN 149, MSHA approved or CEN Class P Type respirator if engineering controls are not adequate to protect against dust.
Hands and Feet:	Nitrile/Neoprene/PVC/Natural Rubber gloves recommended. Not to be used as the absolute basis for glove selection. Actual in use performance must be evaluated due to the many factors associated with proper glove selection. Chemical / slip resistant safety shoes.
Eye Protection:	Chemical safety goggles are recommended.
Other Protective Clothing & Equipment:	Clean, body-covering skin protective clothing. Do not wear rings, watches or similar apparel that could entrap the material.
Work/Hygienic Practices:	Observe good industrial hygiene practices. Do not eat, drink or smoke when using the product. Do not get in eyes. Avoid contact with skin. Wash contaminated clothing before reuse. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace.

Section 9 – Physical and Chemical Characteristics

Information on basic physical and chemical properties

Appearance

Physical state:	solid
Form:	Pellets
Color:	White
Odor:	Odorless
Odor Threshold:	No data available.
pH:	3 - 4 (50 % Water)
Melting Point:	No data available.
Boiling Point:	No data available.
Flash Point:	93,3 °C (Test method unavailable)
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.

Upper/lower limit on flammability or explosive limits

Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density (air=1):	No data available.
Relative density:	0.9 - 1 (15.6 °C)
Solubility(ies)	
Solubility in Water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.
Oxidizing properties:	No data available.

Section 10 – Stability and Reactivity

Stability (Conditions to avoid):	Stable under normal temperatures and pressures. Avoid exposure to atmosphere; tablets will attract water.
Hazardous Decomposition Products:	None
Incompatibility (Materials to avoid):	Alkalies. Bases. Oxidizing agents. Hypochlorites. Materials reactive with hydroxyl compounds. Avoid reactive metals such as sodium, calcium, zinc, etc. Reaction with peroxides may result in violent decomposition of peroxide possible creating an explosion.
Hazardous Decomposition:	Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide, hydrogen chloride, chlorinated compounds, and other products of incomplete combustion. Thermal decomposition may generate lithium oxides and other lithium containing compounds. Will not occur under normal temperatures and pressures.

Section 11 – Toxicological Information

Information on toxicological effects

Acute toxicity

Oral

Product: ATEmix 300 - 2 000 mg/kg.
Ingestion can cause central nervous system effects such as headache, dizziness, drowsiness, and generalized weakness. Swallowing material may cause irritation of the gastrointestinal lining, nausea, vomiting, diarrhea, and abdominal pain.

Dermal

Product: Not classified for acute toxicity based on available data. Prolonged or widespread contact with this material could result in the absorption of potentially harmful amounts.

Inhalation

Product: Not classified for acute toxicity based on available data.

Skin Corrosion/Irritation:

Product: Causes skin irritation.
Remarks: Prolonged or repeated exposure may cause a slight flaking, tenderness, and softening of skin.

Serious Eye Damage/Eye Irritation:

Product: Remarks: Causes serious eye damage.

Respiratory sensitization:

No data available

Skin sensitization:

Calcium bromide Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Lithium bromide Classification: May cause sensitization by skin contact. (Literature) May cause sensitization by skin contact.
Lithium chloride Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.

Specific Target Organ Toxicity - Single Exposure:

Ethylene glycol If material is misted or if vapors are generated from heating, exposure may cause irritation of mucous membranes and the upper respiratory tract.

Reproductive toxicity:

Ethylene glycol

In studies on rats, ethylene glycol has been shown not to interfere with reproduction. In studies on mice, ingestion of ethylene glycol in large amounts caused a small decrease in the number of litters per pair, live pups per litter, and in live pupweight. Based on animal studies, ingestion of ethylene glycol appears to be the major and possibly only route of exposure to produce birth defects. Exposures by inhalation (tested nose only in animals) or skin contact, the primary routes of occupational exposure, have minimal or essentially no effect on the fetus.

Specific Target Organ Toxicity - Repeated Exposure:

Ethylene glycol

Long term dietary intake of ethylene glycol caused liver and kidney effects and deposition of calcium salts in various tissues in animals. Excessive exposure may cause CNS effects, cardiopulmonary effects (metabolic acid-osis), and kidney failure.
Unknown: Target Organ(s): Lung

Aspiration Hazard:

No data available

Chronic Effects**Carcinogenicity:**

No data available

Germ Cell Mutagenicity:

No data available

Section 12 - Ecological Information**Ecotoxicity****Fish**

Lithium bromide LC 50 (Oncorhynchus mykiss, 96 h): 438 mg/l

Ethylene glycol LC 50 (Fathead Minnow, 4 d): 8 050 mg/l

Lithium chloride LC 50 (Rainbow Trout, 4 d): > 100 mg/l

Aquatic Invertebrates

Calcium bromide EC 50 (Water flea (Daphnia magna), 2 Days): > 100 mg/l

Lithium bromide LC 50 (Water Flea (Daphnia Magna), 48 h): 364 mg/l

Lithium chloride EC 50 (Water flea (Daphnia magna), 2 d): 249 mg/l

Toxicity to Aquatic Plants

No data available

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

No data available

Persistence and Degradability**Biodegradation**

No data available

Bioaccumulative Potential**Bioconcentration Factor (BCF)**

No data available

Partition Coefficient n-octanol / water (log Kow)

No data available

Mobility:

No data available

Other Adverse Effects:

No data available.

Section 13 – Disposal Considerations

Waste Disposal: All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. The information presented here pertains only to the product as shipped in its intended condition as described in SDS section 3.

EPA Waste Number: Not Applicable.

Section 14 – Transport Information

U.S. Department of Transportation (D.O.T.) Not regulated as dangerous goods.

IATA: Not regulated as dangerous goods. Per IATA DGR

UN Number: None

Packaging group: None

Environmental hazards: Based on available data, the classification criteria are not met.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: None

Environmental Hazards: Based on available data, the classification criteria are not met.

Transportation of Dangerous Goods (TDG – Canada)

Class: D

Division: 2B (Skin and Eye irritant)

Group: Not Regulated

PIN Number: Not Regulated

Other: Secure product with suitable hold down devices during shipment in dry containers (avoid moisture)

Section 15 – Regulatory Information

Safety, health and environmental regulations/legislation specific for the substance or mixture:

OSHA Hazard Communication Standard: This product is a “Non-Hazardous Chemical” as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and community Right-To-Know Act of 1986) Sections 311 and 312

EU: German Wassergefährdungsklasse (water hazard class): 1

International inventory status:

EINECS (EU): Listed

TSCA (US): Listed

ECL (Korea): Listed

DSL (Canada): Listed

Chemical Safety Assessment: The chemical safety assessment has not been completed for this mixture.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and community Right-To-Know Act of 1986) Section 313: to the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List: To the best of our knowledge, this product does not contain chemical at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product contains no listed substances known to the state of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

U.S. Toxic Substances Control Act: All components of this product are on the TSCA inventory or are exempt from TSCA inventory requirements under 40 CFR 720.30.

CEPA- Domestic Substances List (DSL): all substances contained in this product are listed on the Canadian Domestic Substances list (DSL) or are not required to be listed.

Section 16 – Other Information

HMIS RATING (estimated)- Health: 1 Flammability: 0 Reactivity: 0

NFPA RATING (estimated)- Health: 1 Flammability: 0 Reactivity: 0

List of R-phrases: Harmful if swallowed, R22
Irritating to eyes, R36
Irritating to skin, R38

Personal Protective Rating: B Legend: N.A. – Not Applicable, N.E. – Not Established, N.D. - Not Determined.

Recommended Uses and Restrictions: This product is designed to be used as a desiccant material for compressed air and gas. If your intended use is consistent with our stated uses(s), contact our technical sales department.

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