Material Safety Data Sheet

BTTRI GAS 503

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: BTTRI GAS503
DISTRIBUTOR: AG CHEM
23 Kolot Beak ST,
Cairo, Egypt

FOR MORE INFORMATION CALL:
(saturday-thursday,9:00am-5:00pm)
002-0100-12-111-22

IN CASE OF EMERGENCY CALL:
002-011-45-50-95-21

2. COMPOSITION / INFORMATION ON INGREDIENTS

INGREDIENT NAME	CAS NUMBER	WEIGHT %
Chlorotrifluoromethane (R-13) *Listed SARA Section 313 NFPA = 2-0-0	75-72-9	60
Trifluoromethane (R-23) NFPA = 2-0-0	75-46-7	40

NO PEL OR TLV HAS BEEN ESTABLISHED FOR THESE CHEMICALS.

3. HAZARDS IDENTIFICATION

NO PEL OR TLV HAS BEEN ESTABILSHED FOR THIS MIXTURE

4. FIRST AID MEASURES

SKIN: Promptly flush skin with water until all chemical is removed. If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water. If water is not available, cover with a clean, soft cloth or similar covering. Get medical attention if symptoms persist.

EYES: Immediately flush eyes with large amounts of water for at least 15 minutes (in case of frostbite, water should be lukewarm, not hot) lifting eyelids occasionally to facilitate irrigation. Get medical attention if symptoms persist.

INHALATION: Immediately remove to fresh air. If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available. Get medical attention immediately. DO NOT give epinephrine (adrenaline).

INGESTION: N/A - Product is a gas at ambient conditions.
Never give anything by mouth to an unconscious person.

5. FIRE AND EXPLOSION DATA

FLAMMABLE PROPERTIES

FLASH POINT:	Nonflammable
FLASH POINT METHOD:	Not applicable
AUTOIGNITION TEMPERATURE:	NE
UPPER FLAME LIMIT (volume % in air):	None*
LOWER FLAME LIMIT (volume % in air):	None*
	*Based on ASHRAE Standard 34 with match ignition
FLAME PROPAGATION RATE (solids):	Not applicable
OSHA FLAMMABILITY CLASS:	Not applicable

EXTINGUISHING MEDIA:

Use any standard agent – choose the one most appropriate for type of surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

May decompose during contact with flames, heating elements, or in combustion engines releasing irritating, toxic, and corrosive gases. Container may explode if heated due to resulting pressure rise.

SPECIAL FIRE FIGHTING PRECAUTIONS/INSTRUCTIONS:

Firefighters should wear self-contained, NIOSH-approved breathing apparatus for protection against possible toxic decomposition products. Proper eye and skin protection should be provided. Use water spray to keep fire-exposed containers cool.

6. SPILL MANAGEMENT

IN CASE OF SPILL OR OTHER RELEASE: (Always wear recommended personal protective equipment.)

Remove or extinguish ignition or combustion sources. Evacuate enclosed spaces until gas is dispersed. Keep upwind. Stop leak if possible without risk. Disperse gas with floor-level forced-air ventilation. Exhaust vapors outdoors. Remove all flames, heating elements and gas engines. Wash contaminated clothes before use. Destroy contaminated shoes.

Spills and releases may have to be reported to Federal and/or local authorities.

7. HANDLING AND STORAGE

DO NOT get in eyes, on skin or clothing. Do not breathe vapor, mist or gas. Keep container closed. Keep away from heat, sparks and flames. Store in tightly closed containers. Empty container may contain hazardous residue. Do not drop, reuse or refill container. Do not smoke. Read label before use. Do not cut, grind or weld on or near container due to possible toxic fume generation.

8. SPECIAL PROTECTION INFORMATION

VENTILATION REQUIREMENTS:

Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (see ingredients section). Dilution ventilation acceptable, but local mechanical exhaust ventilation preferred, if practical, at sources of air contamination such as open process equipment.

EYE: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment immediately available.

HAND (GLOVE TYPE): Use synthetic rubber gloves such as neoprene. Lined gloves are recommended for protection from cold.

RESPIRATOR TYPE:
Avoid breathing vapor, mist, or fume. Use NIOSH/MSHA approved full face (TC-19C) supplied air respirator or self-contained breathing apparatus where airborne exposure is likely. If used, full face-piece replaces need for chemical goggles and/or face shield. If exposures cannot be kept at a minimum with engineering controls, use NIOSH/MSHA approved respiratory equipment as noted above. Observe respirator use limitations specified by NIOSH/MSHA or the manufacturer. For emergency and other conditions where there may be a potential for significant exposure, use an approved full-face positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR section 1910.134.

OTHER PROTECTIVE EQUIPMENT
Wear appropriate chemical resistant protective clothing to prevent skin contact.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:	Clear, colorless liquefied gas with faint ethereal (ether-like) odor
MOLECULAR WEIGHT:	87.3
SPECIFIC GRAVITY (water = 1.0):	1.13 @ 0/0°C
SOLUBILITY IN WATER:	Slight
BOILING POINT:	-89°C (-128.2°F)
FREEZING POINT:	NE
VAPOR PRESSURE (MM HG):	575 psia @ 60°F
VAPOR DENSITY (air = 1.0):	3.0
% VOLATILES:	100

10. REACTIVITY DATA

STABILITY (CONDITIONS TO AVOID):
The product is stable.
Thermal decomposition due to exposure to heat (>800°F) or fire.

INCOMPATIBILITIES:
Avoid contact with strong alkali or alkaline earth metals, finely powdered metals such as aluminum, magnesium or zinc and strong oxidizers since they may react with or accelerate decomposition of this material.

HAZARDOUS DECOMPOSITION THERMAL AND OTHER PRODUCTS:
Hydrogen Fluoride, Hydrogen Chloride, Carbon Monoxide, Carbon Dioxide and Chlorine

CONDITIONS TO AVOID:
Flames, extremely hot metal surfaces, heating elements, combustion engines, etc.

11. TOXICITY

ROUTE	ANIMAL	DATA
ORAL	SEE BELOW	
DERMAL	SEE BELOW	

INHALATION SEE BELOW

TOXIC EFFECTS/ROUTES OF ENTRY
OTHER TOXIC EFFECTS:

Skin contact and inhalation are expected to be the primary routes of occupational exposure. As with most liquefied gases, contact with the rapidly volatilizing liquid or cold vapors can cause frostbite to any tissue due to the cryogenic (extreme low temperature) effects of this material. Vapors may be mildly irritating to the eyes. Acute studies with laboratory animals indicate that the components of this halocarbon mixture are practically non-toxic by the inhalation route. However, exposure to halocarbon gases at high concentrations may affect the nervous system and produce a rapid anesthetic effect. The dense vapor of this product displaces air in confined spaces and reduces oxygen available for breathing. Upon exposure to such an atmosphere, a person may experience symptoms of oxygen deficiency including headache, dizziness, drowsiness, cyanosis and lack of muscle control followed by collapse. Prolonged exposure to an oxygen-deficient atmosphere may be fatal. As with many other halocarbons, inhalation of this compound may cause an increase in the sensitivity of the heart to adrenaline, which could result in irregular or rapid heartbeats and reduced heart function. Due to the potential to produce such effects on the heart, workers with heart disease or compromised heart function should have limited exposure to this material.

TARGET ORGAN TOXIN:

Target organs affected by exposure to this material are: Eyes, skin, central nervous system, respiratory system, heart.

TOXICITY COMMENTS:

Data from the scientific literature on HFC 23 are summarized below.
Single exposure (acute) studies indicate:
Inhalation – Practically non-toxic to rats (2-hr LC0 200,000 ppm)
As with many other halogenated hydrocarbons, inhalation of HFC 23, followed by intravenous injection of an agent to simulate human stress reactions, resulted in heart sensitization at very high levels (700,000 ppm) in cats. This level also produced changes in brain electrical activity. No evidence of heart sensitization by inhalation exposure to Trifluoromethane at 500,000 ppm, followed by intravenous injection of an agent to simulate human stress reactions, was found in dogs. There was no evidence of narcosis in guinea pigs exposed by inhalation to 790,000 ppm, while dogs exposed to 800,000 ppm did not lose consciousness, but appeared dazed. It could not be determined if there was an analgesic effect. Human volunteers experienced definite analgesic and impairment of consciousness. Following repeated inhalation exposures for 90-days, no toxic effects were noted in rats and dogs exposed to 10,000 and 5,000 ppm HFC23, respectively. HFC 23 produced no genetic changes in standard tests using bacterial cells, but a positive response was reported in an assay using fruit flies. HFC 23 exposure was found to stimulate DNA synthesis in Escherichia Coli.

CFC (CHLOROTRIFLUOROMETHANE):

Data from the scientific literature on CFC 13 are summarized below.
Single exposure (acute) studies indicate:
Inhalation – Practically non-toxic to rats (4-hr LC50 > 800,000 ppm).
Inhalation of a high concentration (790,000 ppm) of this material for 1-hour had no effect on the righting reflex of rats. The EC50 for central nervous system depression in rats for a 10-minuet inhalation exposure was greater than 800,000 ppm. As with other Chlorofluorocarbons, inhalation of CFC 13, followed by injection of an agent to simulate human stress reactions, resulted in heart sensitization at levels of 800,000 ppm in dogs. A decrease in survival and an increase in DNA synthesis were reported in E. Cole bacterial cells following 24-hour exposure to CFC 13. It produced no genetic changes in standard tests with bacterial cells.

12. DISPOSAL PROCEDURES

Recycle or reclaim if possible. Reclaimed material may be incinerated but toxic and corrosive combustion products (HF and HCL) must be handled appropriately.
Consult federal, state, or local authorities for proper disposal procedures.

13. TRANSPORT INFORMATION

US DOT HAZARD CLASS: US DOT PROPER SHIPPING NAME: Chlorotrifluoromethane and Trifluoromethane Azeotropic Mixture
US DOT HAZARD CLASS: 2.2 (Non-Flammable Gas)
US DOT PACKING GROUP: Not applicable

US DOT ID NUMBER: UN2599

14. ADDITIONAL INFORMATION

SARA HAZARD NOTIFICATION: This product contains a substance which is defined as toxic chemical under, and subject to the reporting requirements of, section 313 of Title III of the Superfund Amendments and reauthorization act of 1986 and 40 CFR part 372. See Ingredients-Hazard Classification section for listed chemical.

15. DISCLAIMER

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