MTi GROUP

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Supplier name: MTI Group
Address: PO Box 1847, Wangara DC, WA, 6947
Telephone: +61 8 9302 3999 (International) – 1300 30 1115 (Aust. – Toll-free)
FAX: +61 8 9302 4899
Emergency: 0400 461 464
Web site: www.mtigroup.com.au
Synonyms: Blast hole blocker, gas bag, inflatable borehole plug
Uses: Blasting applications
MSDS date: 22 May 2009

2. HAZZARD IDENTIFICATION

NON-FLAMMABLE
NON-TOXIC GAS

2.2

NOT CLASSIFIED AS HAZARDOUS ACCORDING TO NOHSC CRITERIA
CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODEE

UN Number:	1950	DG class:	2.2
Subsidiary risk:	None	HAZCHEM:	2Y
Packing group:	III	EPG:	2D1

3. COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient	Formula	CAS No.	Content
1,1,1,2 Tetrafluroethane (HFC134a)	$C_2H_4F_4$	811-97-2	>95%

4. FIRST AID MEASURES

General advise: If unconscious, place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person. If breathing is irregular or stopped, administer artificial respiration. If symptoms persist consult a physician.

Eye contact: Rinse thoroughly with plenty of water, also under the eyelids. Consult a physician.

Inhalation: Move to fresh air. Keep patient warm and at rest. Artificial respiration and/or oxygen may be necessary if product has been misused.

Skin contact: Wash off with warm water. Take off all contaminated clothing immediately.

Advise to physician: Do not give adrenaline or similar drugs.

5. FIRE FIGHTING MEASURES
Flammability: Non flammable liquid, non flammable gas according to the Australian Dangerous Goods Code 7th Edition (2007) and the Recommendations for the Transport of Dangerous Goods – Manual of Tests and Criteria 4th Edition (2003).

Specific hazards during fire fighting: Pressure build up in canisters. The product canister is manufactured, tested and labelled according to Australian Standard AS2278.1-2008

Special protective equipment for fire fighters: In the event of fire wear self-contained breathing apparatus

Further information: Use extinguishing methods that are appropriate to local circumstances and the surrounding environment.

6. ACCIDENTAL RELEASE MEASURES
Spillage: Ventilate area.

7. STORAGE & HANDLING
Storage: Store in cool, dry, well ventilated area, removed from oxidising agents, alkalis, active metals, metal powders (e.g. Aluminium, barium, lithium), heat and foodstuffs. Aerosol containers may leak if exposed to excessive heat (greater than 50°C). Do not stack boxes of BlastBag more than eight (8) high to protect finished product from physical damage.

Handling: Before use carefully read the product label. Use of safe work practices are recommended at all times.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	Values	Control parameters	Basis
1,1,1,2 – Tetrafluroethane	TWA	4,240 mg/m^3 (1,000 ppm)	AU OEL (2004)

Engineering measures: Ensure adequate ventilation, especially in confined areas.

Person protective equipment: Personal Protective Equipment is not required under normal conditions of use.

Biological limits: None allocated.

Engineering controls: If product is punctured avoid inhaling vapours and ventilate area.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance: Clear, colourless liquefied gas (aerosol canister housed within and the gas dispensed in gas-tight bags).

Odour: Slight ether-like odour.

pH: Neutral

Vapour pressure: 530 kPag @ 25°C

Vapour density: 0.0042 g/cm^3 @ 25°C @ 1013 hPa

Boiling point: -26.2^{o}C to 50°C

Melting point: -101°C @ 1013 hPa

Solubility (water): 1.5g/l @ 25°C @ 1013 hPa

Specific gravity: 1.1 to 1.2

Flammability: Not flammable

Flash point: Does not flash

Upper explosion limit: Not applicable

Lower explosion limit: Not applicable

Ignition > 750°C

temperature:

10. STABILITY & REACTIVITY

Materials to avoid: Incompatible with oxidising agents (e.g. hypochlorite), alkalis/ alkali earth metals and finely divided metal powders (e.g. aluminium, barium, lithium).

Conditions to avoid: The product is non flammable in air under ambient conditions of temperature and pressure.

Hazardous decomposition products: Hydrogen halides, carbon dioxide, carbon monoxide, fluorocarbons, carbonyl halides.

11. TOXICOLOGY INFORMATION

Skin irritation: Non-irritant

Eye irritation: Non-irritant

Sensitisation: Not a skin sensitiser

Acute inhalation toxicity: ALC/4hr/rat: 567,000 ppm
LC50/4hr/rat: 358,000 ppm

Repeated dose toxicity: Inhalation: rat
No toxicologically significant effects were found

Human experience: Excessive exposure – Inhalation: Sever shortness of breath, narcosis, and irregular cardiac activity.

Further information: Cardiac sensitisation threshold limit: 312975 mg/m^3
Anaesthetic effects threshold limit: 834600 mg/m^3
Did not show carcinogenic or tetraogenic effects in animal experiments. Concentrations substantially above the TLV value may cause narcotic effects. Rapid evaporation of the liquid may cause frostbite.

12. ECOLOGICAL INFORMATION

Environment: 1.1.1.2-Tetrafluoroethane (HFC-134a) is not an ozone-depleting substance and therefore not subject to control under the Montreal Protocol.

Aquatic toxicity: EC50/48hr/Daphnia magna (Water flea): 980 mg/l

13. DISPOSAL CONSIDERATIONS

Waste disposal: Product should be disposed of be firstly initiating the bag and

allowing it to inflate. Then, in a well ventilated area, pierce bag prior to disposal in accordance with local legislation.

13. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE

Shipping name:	Aerosols	DG class:	2.2
UN Number:	1950	HAZCHEM:	2Y
Subsidiary risk:	None	EPG:	2D1
Packing group:	III		

15. REGULATORY INFORMATION

Further information: Not classified as hazardous according to criteria of NOHSC

National regulation: No poison schedule number allocated

16. OTHER INFORMATION

Instructions of use: The product should not be dis-assembled. Tie the string used to lower the bag into position before activating the bag. Locate the aerosol trigger and firmly depress trigger until the trigger is latched. Lower the bag into the blast hole holding it at the correct depth until it inflates. When the bag has sufficiently inflated remove by pulling sharply on the string.

Sources of data:

1 National Code of Practice for the Preparation of Material Safety Data Sheets (2nd edition) NOHSC:2001(2003)]
2 Approved Criteria for Classifying Hazardous Substances [NOHSC:1008(1999)]
3 List of Designated Hazardous Substances [NOHSC:1005(1999)]
4 Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)]
5 Australian Dangerous Goods Code 7 [National Road Transport Commission]
6 Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) No. 19 [NDPSC:2004]
7 Recommendations for the Transport of Dangerous Goods

– Manual of Tests and Criteria 4th Edition (2003) [United Nations].

8   Aerosol containers – Part 1: Metal aerosol dispensers of capacity 50ml to 1000ml inclusive [AS2278.1-2008]

Further information: The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The above information relates only to the specific material(s) designated herein and may not be valid for such material(s) used in combination with any other materials or in any process or if the material is altered or processed, unless specified in the text.