

Safety Data Sheet



Section 1: Identification

Product identifier

Product Name • 1,3,5-Tris(trifluoromethyl)benzene (1 - 500 ppm),
Bromopentafluorobenzene (1 - 500 ppm), Nitrogen (Balance)

Product Code • 90090

Relevant identified uses of the substance or mixture and uses advised against

Recommended use • Calibration standard

Details of the supplier of the safety data sheet

Manufacturer • Air Liquide
2700 Post Oak Blvd.
Houston, TX 77056
United States
www.us.airliquide.com
sds@airliquide.com

Telephone (Technical) • 713-896-2896

Telephone (Technical) • 800-819-1704

Emergency telephone number

Manufacturer • 800-424-9300 - CHEMTREC

Manufacturer • +1 703-527-3887 - Outside United States

Section 2: Hazard Identification

United States (US)

According to OSHA 29 CFR 1910.1200 HCS

Classification of the substance or mixture

OSHA HCS 2012 • Compressed Gas - H280
Simple Asphyxiant

Label elements

OSHA HCS 2012

WARNING



Hazard statements • Contains gas under pressure; may explode if heated - H280
May displace oxygen and cause rapid suffocation.

Precautionary statements

Storage/Disposal • Store in a well-ventilated place. - P403

Other hazards

OSHA HCS 2012

- Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

Canada

According to WHMIS

Classification of the substance or mixture

WHMIS

- Compressed Gas - A

Label elements

WHMIS



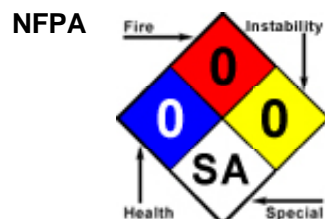
- Compressed Gas - A

Other hazards

WHMIS

- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces.
In Canada, the product mentioned above is considered hazardous under the Workplace Hazardous Materials Information System (WHMIS).

Other information



Section 3 - Composition/Information on Ingredients

Substances

- Material does not meet the criteria of a substance.

Mixtures

Hazardous Components					
Chemical Name	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments
Nitrogen	CAS:7727-37-9 EINECS:231-783-9	99.9% TO 99.9998%	NDA	OSHA HCS 2012: Press. Gas - Comp.; Simp. Asphyx.	NDA
1,3,5-Tris(Trifluoromethyl) Benzene	CAS:729-81-7	0.0001% TO 0.05%	NDA	OSHA HCS 2012: Flam. Liq. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3: Resp. Irrit.	NDA

Benzene, bromopentafluoro-	CAS:344-04-7 EINECS:206-449-0	0.0001% TO 0.05%	NDA	OSHA HCS 2012: Flam. Liq. 4; Skin Irrit. 2; Eye Irrit. 2; STOT SE 3: Resp. Irrit.	NDA
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Section 4: First-Aid Measures

Description of first aid measures

Inhalation

- IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Administer oxygen if breathing is difficult. Give artificial respiration if victim is not breathing. If signs/symptoms continue, get medical attention.

Skin

- Although exposure is unlikely, in case of contact immediately flush skin with running water. If skin irritation develops get medical advice/attention.

Eye

- First aid is not expected to be necessary if material is used under ordinary conditions and as recommended. If irritation develops and persists, get medical attention.

Ingestion

- Ingestion is not considered a potential route of exposure.

Most important symptoms and effects, both acute and delayed

- Refer to Section 11 - Toxicological Information.

Indication of any immediate medical attention and special treatment needed

Notes to Physician

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred. A potential health hazard associated with this gas is anoxia.

Other information

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO GASES WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn. Victim(s) who experience any adverse effect after overexposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

Section 5: Fire-Fighting Measures

Extinguishing media

- Suitable Extinguishing Media** • Use extinguishing agent suitable for type of surrounding fire.

- Unsuitable Extinguishing Media** • No data available

Special hazards arising from the substance or mixture

- Unusual Fire and Explosion Hazards** • Containers may explode when heated. Ruptured cylinders may rocket.

- Hazardous Combustion Products** • No data available

Advice for firefighters

- Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible. Wear positive pressure self-contained breathing apparatus (SCBA). Move containers from fire area if you can do it without risk.

FIRE: If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

FIRE INVOLVING TANKS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

FIRE INVOLVING TANKS: Cool containers with flooding quantities of water until well after fire is out.

FIRE INVOLVING TANKS: Do not direct water at source of leak or safety devices; icing may occur.

FIRE INVOLVING TANKS: Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.

FIRE INVOLVING TANKS: ALWAYS stay away from tanks engulfed in fire.

Section 6 - Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Personal Precautions

- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Do not touch or walk through spilled material. Ventilate the area before entry. Test for sufficient oxygen, especially in confined spaces and low-lying areas, before allowing reentry.

Emergency Procedures

- Stop leak if you can do it without risk. Keep unauthorized personnel away. Keep out of low areas. Stay upwind. Do not direct water at spill or source of leak. **LARGE SPILL:** Consider initial downwind evacuation for at least 500 meters (1/3 mile)

Environmental precautions

- No special environmental precautions necessary.

Methods and material for containment and cleaning up

Containment/Clean-up Measures

- Stop leak if you can do it without risk. Do not direct water at spill or source of leak. Use water spray to reduce vapors; do not put water directly on leak, spill area or inside container. If possible, turn leaking containers so that gas escapes rather than liquid. Isolate area until gas has dispersed. Ventilate the area.

Section 7 - Handling and Storage

Precautions for safe handling

Handling

- Use only with adequate ventilation. Ventilate closed spaces before entering. Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Cylinders should be firmly secured to prevent falling or being knocked-over. Do not attempt to repair, adjust, or in any other way modify cylinders. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Empty containers retain product residue and can be hazardous. Do not cut, weld, puncture or incinerate container.

Conditions for safe storage, including any incompatibilities

Storage

- Store in a cool, dry, well-ventilated place. Protect cylinders against physical damage. Cylinders should be firmly secured to prevent falling or being knocked-over.

Section 8 - Exposure Controls/Personal Protection

Control parameters

Exposure Limits/Guidelines • Currently there are no applicable exposure limits established for this material.

Exposure controls

Engineering Measures/Controls

- Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal Protective Equipment

Respiratory

- Follow the OSHA respirator regulations found in 29 CFR 1910.134. Use a NIOSH/MSHA approved respirator if exposure limits are exceeded or symptoms are experienced.

Eye/Face

- Wear safety glasses.

Skin/Body

- Wear leather gloves when handling cylinders.

Environmental Exposure Controls

- Follow best practice for site management and disposal of waste. Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

Section 9 - Physical and Chemical Properties

Information on Physical and Chemical Properties

Material Description			
Physical Form	Gas	Appearance/Description	Colorless compressed gas with no odor.
Color	Colorless	Odor	Odorless
Odor Threshold	No data available		
General Properties			
Boiling Point	-196 C(-320.8 F) Nitrogen	Melting Point	-210 C(-346 F) Nitrogen
Decomposition Temperature	No data available	pH	No data available
Specific Gravity/Relative Density	0.967 Water=1 Nitrogen	Water Solubility	No data available
Viscosity	No data available		
Volatility			
Vapor Pressure	No data available	Vapor Density	0.97 Air=1 Nitrogen
Evaporation Rate	No data available		
Flammability			
Flash Point	No data available	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not flammable.		
Environmental			
Octanol/Water Partition coefficient	No data available		

Section 10: Stability and Reactivity

Reactivity

- No dangerous reaction known under conditions of normal use.

Chemical stability

- Stable under normal temperatures and pressures.

Possibility of hazardous reactions

- Hazardous polymerization will not occur.

Conditions to avoid

- Excess heat.

Incompatible materials

- None known.

Hazardous decomposition products

- None known.

Section 11 - Toxicological Information

Information on toxicological effects

GHS Properties	Classification
Acute toxicity	OSHA HCS 2012 • Classification criteria not met
Aspiration Hazard	OSHA HCS 2012 • Classification criteria not met
Carcinogenicity	OSHA HCS 2012 • Classification criteria not met
Germ Cell Mutagenicity	OSHA HCS 2012 • Classification criteria not met
Respiratory sensitization	OSHA HCS 2012 • Classification criteria not met
Serious eye damage/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin corrosion/Irritation	OSHA HCS 2012 • Classification criteria not met
Skin sensitization	OSHA HCS 2012 • Classification criteria not met
STOT-RE	OSHA HCS 2012 • Classification criteria not met
STOT-SE	OSHA HCS 2012 • Classification criteria not met
Toxicity for Reproduction	OSHA HCS 2012 • Classification criteria not met

Route(s) of entry/exposure • Inhalation, Skin, Eye

Potential Health Effects

Inhalation

Acute (Immediate)

- This material is a simple asphyxiant. May displace or reduce oxygen available for breathing especially in confined spaces. If this material is released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with decreased levels of oxygen: increase in breathing and pulse rate, emotional upset, abnormal fatigue, nausea, vomiting, collapse, loss of consciousness, convulsive movements, respiratory collapse and death.

Chronic (Delayed)

- No data available

Skin

Acute (Immediate)

- Under normal conditions of use, no health effects are expected.

Chronic (Delayed)

- Under normal conditions of use, no health effects are expected.

Eye

- Acute (Immediate)** ● Under normal conditions of use, no health effects are expected.
- Chronic (Delayed)** ● Under normal conditions of use, no health effects are expected.
- Ingestion**
- Acute (Immediate)** ● Ingestion is not anticipated to be a likely route of exposure to this product.
- Chronic (Delayed)** ● Ingestion is not anticipated to be a likely route of exposure to this product.
- Carcinogenic Effects** ● The components of this material are not found on the following lists: FEDERAL OSHA Z LIST, NTP and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

Section 12 - Ecological Information

Toxicity

- Material data lacking.

Persistence and degradability

- Material data lacking.

Bioaccumulative potential

- Material data lacking.

Mobility in Soil

- Material data lacking.

Other adverse effects

- Material data lacking.

Section 13 - Disposal Considerations

Waste treatment methods

- Product waste** ● Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.
- Packaging waste** ● Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

Section 14 - Transport Information

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards
DOT	UN1956	Compressed gas, n.o.s (Nitrogen)	2.2	NDA	NDA
TDG	UN1956	COMPRESSED GAS, N.O.S. (Nitrogen)	2.2	NDA	NDA
IMO/IMDG	UN1956	COMPRESSED GAS, N.O.S. (Nitrogen)	2.2	NDA	NDA
IATA/ICAO	UN1956	Compressed gas, n.o.s (Nitrogen)	2.2	NDA	NDA

Special precautions for user

- Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

- Not relevant.

Section 15 - Regulatory Information

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

SARA Hazard Classifications

- Acute, Pressure(Sudden Release of)

State Right To Know				
Component	CAS	MA	NJ	PA
Nitrogen	7727-37-9	Yes	Yes	Yes
1,3,5-Tris (Trifluoromethyl) Benzene	729-81-7	No	No	No
Benzene, bromopentafluoro-	344-04-7	No	No	No

Inventory				
Component	CAS	Canada DSL	Canada NDSL	TSCA
Nitrogen	7727-37-9	Yes	No	Yes
1,3,5-Tris (Trifluoromethyl) Benzene	729-81-7	No	No	No
Benzene, bromopentafluoro-	344-04-7	No	Yes	Yes

Canada

Labor

Canada - WHMIS - Classifications of Substances

- Nitrogen 7727-37-9 99.9% TO 99.9998% A
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

Canada - WHMIS - Ingredient Disclosure List

- Nitrogen 7727-37-9 99.9% TO 99.9998% Not Listed
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

Environment

Canada - CEPA - Priority Substances List

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

United States

Labor

U.S. - OSHA - Process Safety Management - Highly Hazardous Chemicals

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - OSHA - Specifically Regulated Chemicals

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

Environment

U.S. - CAA (Clean Air Act) - 1990 Hazardous Air Pollutants

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Hazardous Substances and their Reportable Quantities

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Radionuclides and Their Reportable Quantities

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances EPCRA RQs

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Section 302 Extremely Hazardous Substances TPQs

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Section 313 - Emission Reporting

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - CERCLA/SARA - Section 313 - PBT Chemical Listing

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

United States - California**Environment****U.S. - California - Proposition 65 - Carcinogens List**

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - California - Proposition 65 - Developmental Toxicity

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - California - Proposition 65 - Maximum Allowable Dose Levels (MADL)

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed
• 1,3,5-Tris(Trifluoromethyl) Benzene	729-81-7	0.0001% TO 0.05%	Not Listed

U.S. - California - Proposition 65 - No Significant Risk Levels (NSRL)

• Nitrogen	7727-37-9	99.9% TO 99.9998%	Not Listed
• Benzene, bromopentafluoro-	344-04-7	0.0001% TO 0.05%	Not Listed

- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Female

- Nitrogen 7727-37-9 99.9% TO 99.9998% Not Listed
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

U.S. - California - Proposition 65 - Reproductive Toxicity - Male

- Nitrogen 7727-37-9 99.9% TO 99.9998% Not Listed
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

United States - Pennsylvania

Labor

U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List

- Nitrogen 7727-37-9 99.9% TO 99.9998% Not Listed
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

U.S. - Pennsylvania - RTK (Right to Know) - Special Hazardous Substances

- Nitrogen 7727-37-9 99.9% TO 99.9998% Not Listed
- Benzene, bromopentafluoro- 344-04-7 0.0001% TO 0.05% Not Listed
- 1,3,5-Tris(Trifluoromethyl) Benzene 729-81-7 0.0001% TO 0.05% Not Listed

Section 16 - Other Information

Last Revision Date

- 30/April/2013

Preparation Date

- 06/November/2012

Disclaimer/Statement of Liability

- To the best of Air Liquide's knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

Key to abbreviations

NDA = No Data Available

