



Safety Data Sheet
Calibration Gas Mixture: R1234yf

Section 1. Identification

Product identifier used on the label:	Calibration Gas Mixture, R1234yf
Other means of identification:	Part # RBxxL-R1234yf/xxxx
Product use:	Calibration Standard
Supplier's details:	Calibration Technologies, Inc. 920 N Tradewinds Parkway Columbia, MO 65201 1-866-394-5861
Emergency telephone:	1-800-535-5053

Section 2. Hazards Identification

Classification:	Compressed Gas
-----------------	----------------

GHS label Elements

Signal word:	Warning
Hazard statements:	Extremely flammable compressed gas under pressure; may explode if heated.
Hazard pictograms:	

Storage:

Protect from sunlight. Store in a well ventilated place

Precautionary statement:

Use valve rated for cylinder pressure.

Section 3. Composition/Information on ingredients

Substance/mixture:	Mixture
--------------------	---------

Ingredient name	%	CAS number
Nitrogen	0-79.06	7727-37-9
Oxygen	0-20.89	7782-44-7
2,3,3,3-Tetrafluoroprop-1-ene	0.05-100	754-12-1

Section 4. First-aid measures
Description of necessary measures subdivided below:

Inhalation: Immediately remove victim to fresh air. Get medical attention if symptoms occur.

Eye Contact: Rinse immediately with plenty of water for at least 15 minutes.

Skin Contact: Thaw frosty parts with lukewarm water. Do not rub affected area.

Ingestion: N/Ap

Most important symptoms/effects: N/Ap

Immediate attention/special treatment needed: N/Ap

Section 5. Fire-fighting measures

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media: N/Ap

Specific hazards arising from the chemical: N/Ap

Special protective equipment/precautions for fire-fighters: Contains gas under pressure. If heated, pressure will increase and cylinder may burst. Wear full protective clothing and self-contained breathing apparatus. Risk of explosion.

Section 6. Accidental release measures

Personal precautions, protective equipment, emergency procedures: Wear self-contained breathing apparatus and protective suit. Eliminate all ignition sources. Ventilate area, shut off valve, and remove from heat.

Methods and materials for containment/cleaning up: N/Ap

Section 7. Handling and storage

Precautions for safe handling: Use valve rated for cylinder pressure. Avoid breathing gas. Avoid contact with eyes.

Conditions for safe storage, including any incompatibilities: Store in well ventilated area. Protect from elevated temperatures.

Section 8. Exposure controls/Personal protection

Control parameters/Occupation exposure limits:	Ingredient name	Exposure limits
	2,3,3,3-Tetrafluoroprop-1-ene	WEEL TWA: 500ppm 8 hours

Eye/Face protection: Safety glasses

Skin protection: N/Ap

Respiratory Protection: Avoid breathing gas

Other protective equipment: N/Ap

Section 9. Physical and chemical properties

Appearance (physical state, color, etc.):	Colorless
Odor:	Slightly pungent
Odor threshold:	N/Ap
pH:	N/Ap
Melting point/freezing point:	N/Ap
Initial boiling point and boiling range:	N/Ap
Flash Point:	N/Ap
Evaporation rate:	N/Ap
Flammability (solid, gas):	Extremely flammable gas. Method: Flammability (gases)
Upper/lower flammability or explosive limits:	N/Ap
Vapor pressure:	N/Ap

Vapor density:	N/Ap
Relative density:	N/Ap
Solubility (ies):	N/Ap
Partition coefficient: n-octanol/water:	N/Ap
Auto-ignition temperature:	N/Ap
Decomposition temperature:	N/Ap
Viscosity:	N/Ap

Section 10. Stability and reactivity

Reactivity:	N/Ap
Chemical stability:	Stable
Possibility of hazardous reactions:	N/Ap
Conditions to avoid:	Do not spray on a naked flame or any incandescent material.
Incompatible materials:	Heat, flames and sparks.
Hazardous decomposition products:	Hydrogen fluoride, Carbon monoxide, CO ₂ , Carbonyl halides

Section 11. Toxicological information

Lethal concentration (LC50):	>405,000ppm (R1234yf ingredient), Rat 4 hrs
Lethal dose 50 (LD50):	N/Ap
Teratogenicity:	N/Ap
Reproductive effects:	N/Ap
Mutagenicity:	N/Ap

Section 12. Ecological information

No adverse ecological effects are expected.

Section 13. Disposal considerations

Waste disposal method:	Non-refillable cylinder. Allow gas to vent slowly to atmosphere in an unconfined area until completely empty. Dispose of empty cylinder normally.
------------------------	---

Section 14. Transport information

UN Number:	3161
UN proper shipping name:	N/Ap
Transport hazard class:	2.1 (flammable)
Identification number:	UN3161
Packing group:	II
Environmental hazards:	N/Ap
Transport in bulk:	N/Ap
Special precautions:	Must be shipped as Hazardous Materials.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product in question:

N/Ap

Section 16. Other information

Date of preparation/last revision: 10/8/2019