

## Material Safety Data Sheet

### Cool50 (R424A)

#### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** RS-44 (R-424A)  
**DISTRIBUTOR:** Coolgas, Inc  
30045 FM 2978 Road  
Magnolia, TX 77354

**FOR MORE INFORMATION CALL:**  
(Monday-Friday, 8:00am-5:00pm)  
1-800-366-1356

**IN CASE OF EMERGENCY CALL:**  
CHEMTREC: 1-800-424-9300

#### 2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>INGREDIENT NAME</u>	<u>CAS NUMBER</u>	<u>WEIGHT %</u>
Pentafluoroethane (HFC-125)	354-33-6	50.5
1,1,1,2-Tetrafluoroethane (HFC-134a)	811-97-2	47.0
Butane (R-600)	106-97-8	1.0
Isobutane (R-600a)	75-28-5	0.9
Isopentane (R-601a)	78-78-4	0.6

Trace impurities and additional material names not listed above may also appear in Section 15 toward the end of the MSDS. These materials may be listed for local "Right-To-Know" compliance and for other reasons.

#### 3. HAZARDS IDENTIFICATION

**MAIN HAZARDS:** No Significant Hazard  
**OTHER HAZARDS:** Liquefied Gas  
Rapid evaporation of the liquid may cause frostbite  
**DELAYED EFFECTS:** None Known

Ingredients found on one of the OSHA designated carcinogen lists are listed below:

<u>INGREDIENT NAME</u>	<u>NTP STATUS</u>	<u>IARC STATUS</u>	<u>OSHA LIST</u>
No ingredients listed in this section			

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### 4. FIRST AID MEASURES

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**SKIN:** Allow to evaporate. Wash off immediately with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation or symptoms persist.

**EYES:** Keep eyelids open to allow evaporation of the product. Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Seek medical attention if irritation or symptoms persist.

**INHALATION:** Move the exposed person to fresh air. If breathing is difficult give oxygen. Seek medical attention if irritation or symptoms persist.

**INGESTION:** Ingestion is unlikely because of the physical properties and is not expected to be hazardous. DO NOT induce vomiting unless instructed to do so by a physician.

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### 5. FIRE FIGHTING MEASURES

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#### FLAMMABLE PROPERTIES

<b>FLASH POINT:</b>	Gas, not applicable per DOT regulations
<b>FLASH POINT METHOD:</b>	Not applicable
<b>AUTOIGNITION TEMPERATURE:</b>	Unknown
<b>UPPER FLAME LIMIT (volume % in air):</b>	None*
<b>LOWER FLAME LIMIT (volume % in air):</b>	None*
	*Based on ASHRAE Standard 34 with match ignition
<b>FLAME PROPAGATION RATE (solids):</b>	Not applicable
<b>OSHA FLAMMABILITY CLASS:</b>	Not applicable

#### **EXTINGUISHING MEDIA:**

Use extinguishing media appropriate to the surrounding fire conditions. Cool fire exposed containers with water spray.

#### **FIRE HAZARDS:**

Heating produces hazardous fumes.

#### **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.

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### 6. ACCIDENTAL RELEASE MEASURES

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**PERSONAL PRECAUTIONS:** Ensure adequate ventilation of the working area. Evacuate personnel to a safe area. Prevent further spillage if safe. Keep public away from danger area. Keep upwind. Eliminate all sources of ignition.

**ENVIRONMENTAL PRECAUTIONS:** Should not be released into the environment.

**CLEAN UP METHODS:** Allow to evaporate. Do not allow product to enter drains.

**Spills and releases may have to be reported to Federal and/or local authorities. See Section 15 regarding reporting requirements.**

### 7. HANDLING AND STORAGE

**HANDLING:** Ensure adequate ventilation of the working area. Keep away from sources of ignition – No smoking. Keep away from heat. Use only equipment and materials which are compatible with the product.

**STORAGE:** Store in a cool, well-ventilated area of low fire risk and out of direct sunlight. Protect cylinder and its fittings from physical damage. Storage in subsurface locations should be avoided. Close valve tightly after use and when empty.

### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

#### ENGINEERING MEASURES:

Provide local ventilation at filling zones and areas where leakage is probable. Mechanical (general) ventilation may be adequate for other operating and storage areas.

#### PERSONAL PROTECTIVE EQUIPMENT

##### SKIN PROTECTION:

Skin contact with refrigerant may cause frostbite. General work clothing and gloves (leather) should provide adequate protection. If prolonged contact with liquid or gas is anticipated, insulated gloves constructed of PVA, neoprene or butyl rubber should be used. Any contaminated clothing should be promptly removed and washed before reuse.

##### EYE PROTECTION:

For normal conditions, wear safety glasses. Where there is reasonable probability of liquid contact, wear chemical safety goggles. In case of splashing wear face shield.

##### RESPIRATORY PROTECTION:

Use self contained breathing apparatus in all circumstances where there is medium confinement, insufficient oxygen, in cases of uncontrolled emissions, and in all circumstances where standard respiratory protection does not provide adequate protection. Use only respiratory protection that conforms to international / national standards. In the case of vapor formation use a respirator with an approved filter.

##### ADDITIONAL RECOMMENDATIONS:

Where contact with liquid is likely, such as in a spill or leak, impervious boots and clothing should be worn. High dose-level warning signs are recommended for areas of principle exposure. Provide eyewash stations and quick-drench shower facilities at convenient locations. For tank cleaning operations, see OSHA regulations, 29 CFR 1910.132 and 29 CFR 1910.133.

#### EXPOSURE GUIDELINES

<u>INGREDIENT NAME</u>	<u>ACGIH TLV</u>	<u>OSHA PEL</u>	<u>OTHER LIMIT</u>
Pentafluoroethane	None	None	1000ppm TWA (8hr)
1,1,1,2-Tetrafluoroethane	None	None	*1000ppm TWA (8hr)
Butane	1000 ppm TWA (8hr)	None	None
Isobutane	1000 ppm TWA (8hr)	None	None
Isopentane	600 ppm TWA (8hr)	None	None

\* = Workplace Environmental Exposure Level (AIHA)

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### 9. PHYSICAL AND CHEMICAL PROPERTIES

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<b>APPEARANCE:</b>	Clear, colorless liquid and vapor
<b>PHYSICAL STATE:</b>	Gas at ambient temperatures
<b>MOLECULAR WEIGHT:</b>	108.1
<b>ODOR:</b>	Faint ethereal odor
<b>SOLUBILITY IN WATER (weight %):</b>	Insoluble in water
<b>BOILING POINT:</b>	-38.7°C (-37.6°F)
<b>VAPOR PRESSURE at 25°C:</b>	9.67 <sup>(1)</sup> bara 140.2 (1) psia
<b>FLASH POINT:</b>	Not applicable

(Flash point method and additional flammability data are found in Section 5.)

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### 10. STABILITY AND REACTIVITY

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#### **NORMALLY STABLE? (CONDITIONS TO AVOID):**

The product is stable.

Do not mix with oxygen or air above atmospheric pressure. Any source of high temperatures, such as lighted cigarettes, flames, hot spots or welding may yield toxic and/or corrosive decomposition products.

#### **INCOMPATIBILITIES:**

(Under specific conditions: e.g. very high temperatures and/or appropriate pressures) – Freshly abraded aluminum surfaces (may cause strong exothermic reaction). Chemically reactive metals: potassium, calcium, powdered aluminum, magnesium, and zinc.

#### **HAZARDOUS DECOMPOSITION PRODUCTS:**

Hydrogen fluoride products.

#### **HAZARDOUS POLYMERIZATION:**

Will not occur.

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### 11. TOXICOLOGICAL INFORMATION

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Butane	Inhalation Rat LC50/4H h = 658000 mg/m <sup>3</sup> Inhalation Mouse LC50/2H h = 68000 mg/m <sup>3</sup>
Isobutane	Inhalation Rat LC50/15min = 57 pph Inhalation Rat LC50/4H h = 65800 mg/m <sup>3</sup> Inhalation Mouse LC50/2H h = 68000 mg/m <sup>3</sup>
1,1,1,2-Tetrafluoroethane	Inhalation Rat LC50/4H h = 1500 gm/m <sup>3</sup> Inhalation Mouse LC50/2H h = 1700 gm/m <sup>3</sup>

#### **CORROSIVITY:**

May cause irritation to eyes. May cause irritation to skin. Rapid evaporation of the liquid may cause frostbite.

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### 12. ECOLOGICAL INFORMATION

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#### ECOTOXICITY:

1,1,1,2-Tetrafluoroethane

Daphnia ED50/48h = 980 mg/l

Rainbow trout LC50/96h = 450 mg/l

#### BIOACCUMULATION:

This product is subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82. This product contains greenhouse gases which may contribute to global warming. Do NOT vent to the atmosphere. To comply with provisions of the U.S. Clean Air Act, any residual must be recovered.

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### 13. DISPOSAL CONSIDERATIONS

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#### RCRA

Is the unused product a RCRA hazardous waste if discarded?

Not a hazardous waste

If yes, the RCRA ID number is:

Not applicable

#### **OTHER DISPOSAL CONSIDERATIONS:**

Disposal must comply with federal, state, and local disposal or discharge laws. Cool50 is subject to U.S. Environmental Protection Agency Clean Air Act Regulations Section 608 in 40 CFR Part 82 regarding refrigerant recycling.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

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### 14. TRANSPORT INFORMATION

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**US DOT PROPER SHIPPING NAME:** LIQUEFIED GAS, N.O.S. (Pentafluoroethane, 1,1,1,2-tetrafluoroethane, iso-Pentane, Butane, Isobutane)

**US DOT HAZARD CLASS:** 2

**US DOT PACKING GROUP:** Not applicable

**US DOT ID NUMBER:** UN3163

For additional information on shipping regulations affecting this material, contact the information number found in Section 1.

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### 15. REGULATORY INFORMATION

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#### SUBSTANCES CONTROL ACT (TSCA)

**TSCA INVENTORY STATUS:** Listed on the TSCA inventory

**OTHER TSCA ISSUES:** None

#### SARA TITLE III / CERCLA

“Reportable Quantities” (RQs) and/or “Threshold Planning Quantities” (TPQs) exist for the following ingredients

#### INGREDIENT NAME SARA / CERCLA RQ (lb.) SARA EHS TPQ (lb.)

No ingredients listed in this section

Spills or releases resulting in the loss of any ingredient at or above its RQ requires immediate notification to the National Response Center [(800) 424-8802] and to your Local Emergency Planning Committee.

**SECTION 311 HAZARD CLASS:** IMMEDIATE  
PRESSURE

### SARA 313 TOXIC CHEMICALS:

The following ingredients are SARA 313 "Toxic Chemicals". CAS numbers and weight percents are found in Section 2.

INGREDIENT NAME

COMMENT

No ingredients listed in this section.

### STATE RIGHT-TO-KNOW

In addition to the ingredients found in Section 2, the following are listed for state right-to-know purposes.

INGREDIENT NAME

WEIGHT %

COMMENT

No ingredients listed in this section

### ADDITIONAL REGULATORY INFORMATION:

Cool50 is subject to U.S. Environmental Protection Agency Clean Air Act Regulations at 40 CFR Part 82.

**WARNING: DO NOT vent** to the atmosphere. To comply with provisions of the U.S. Clean Air Act, any residual must be recovered. **Contains Pentafluoroethane (HFC-125), and 1,1,1,2-Tetrafluoroethane (HFC-134a)**, greenhouse gases which may contribute to global warming.

### WHMIS CLASSIFICATION (CANADA):

This product has been evaluated in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### FOREIGN INVENTORY STATUS:

EU – EINECS #2065578-HFC-125

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## 16. OTHER INFORMATION

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**CURRENT ISSUE DATE:** July, 2013

**PREVIOUS ISSUE DATE:** None

**OTHER INFORMATION:** HMIS Classification: Health – 1, Flammability – 1, Reactivity – 0  
NFPA Classification: Health – 2, Flammability – 1, Reactivity – 0  
ANSI/ASHRAE 34 Safety Group – A1  
UL Classified

Regulatory Standards:

1. OSHA regulations for compressed gases: 29 CFR 1910.101
2. DOT classification per 49 CFR 172.101
3. Clean Air Act Class II Substance

### 17. DISCLAIMER

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