

ISO9001 | ISO45001
IATF16949 | ISO14001



Product Manual



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Though it has been reviewed for several times for accuracy, it is only for reference. [2024.03]

ZHEJIANG SANMEI CHEMICAL IND. CO., LTD.

COMPANY PROFILE

SANMEI

- Company profile: Zhejiang Sanmei Chemical Ind, Co., Ltd.
- Founded: May 11, 2001 Registered capital: RMB 610 million
- Enterprise nature: Private company Staff: 2000+
- Add: No.218, Qingnian Road, Wuyi County, Zhejiang Province, 321200, China

WHOLLY-OWNED SUBSIDIARY

- Jiangsu Sanmei Chemical Ind. Co., Ltd.
- Fujian Qingliu Dongying Chemical Ind. Co., Ltd.
- Zhejiang Sanmei Chemical Products Co., Ltd.
- Fluo Shanghai International Trade Co., Ltd.
- Zhejiang Sanmei Refrigeration Fitting Co., Ltd.
- Chongqing Xincheng Industry. Co., Ltd.
- Guangdong Furun Chemical Ind, Co., Ltd.
- Chongqing JiaLiHe New Material Technology Co.,Ltd.

EQUITY PARTICIPATION COMPANY

- Zhejiang ShengmeiLithium Battery Materials Co.Ltd.
- Zhejiang YangshengThermal Environmental Protection Co.. Ltd

SINO-FOREIGNJOINT VENTURE

- ZheJiang Morita New Materials Co.,Ltd.

Capacity

Up to now, our annual manufacturing capacity is as follows:

191,000MT AHF; 25,000MT mix-refrigerant.

Production Quota / Year:

51,506MT R134a, 31,498MT R125, 27,779MT R32, 6,285MT R143a;

14,538MT HCFC-141b, 1,706MT HCFC-142b, 9,547MT R22

Oint venture/Morita New Materials:

20000MT Electronic grade hydrofluoric acid, 5000MT Ammonium fluoride, 17000MT BOE;

Project under way:

5000MT PVDF, 5000MT FEP(zhejiang).6000MT LiPF6, 2000MT R116(fujian)

Lifsi-3000MT(shengmei)

Electronic Grade Hydrofluoric Acid

HF-H₂O

HS Code: 2811110000
UN NO: 1790
Danger Class: 8

Applications:

- Mainly used as wafer cleaner and etching chemical in IC industries. It is an indispensable chemical in manufacturing microelectronics.
- Used as an etching reagent for glass substrate, Si₃N₄ and SiO₂ in TFT-LCD industry.
- Used as a cleaner and etching reagent in solar cell industry.
- Reacts with metal salt, oxide, and hydroxide to form fluoride salt, and reacts with silicate to generate SiF₄ gas.

Applications: Avoid sunshine and keep in well-ventilated places.

Packaging: 1 gallon barrel; 20L barrel; 200L barrel; 1000L IBC.



Physical Properties

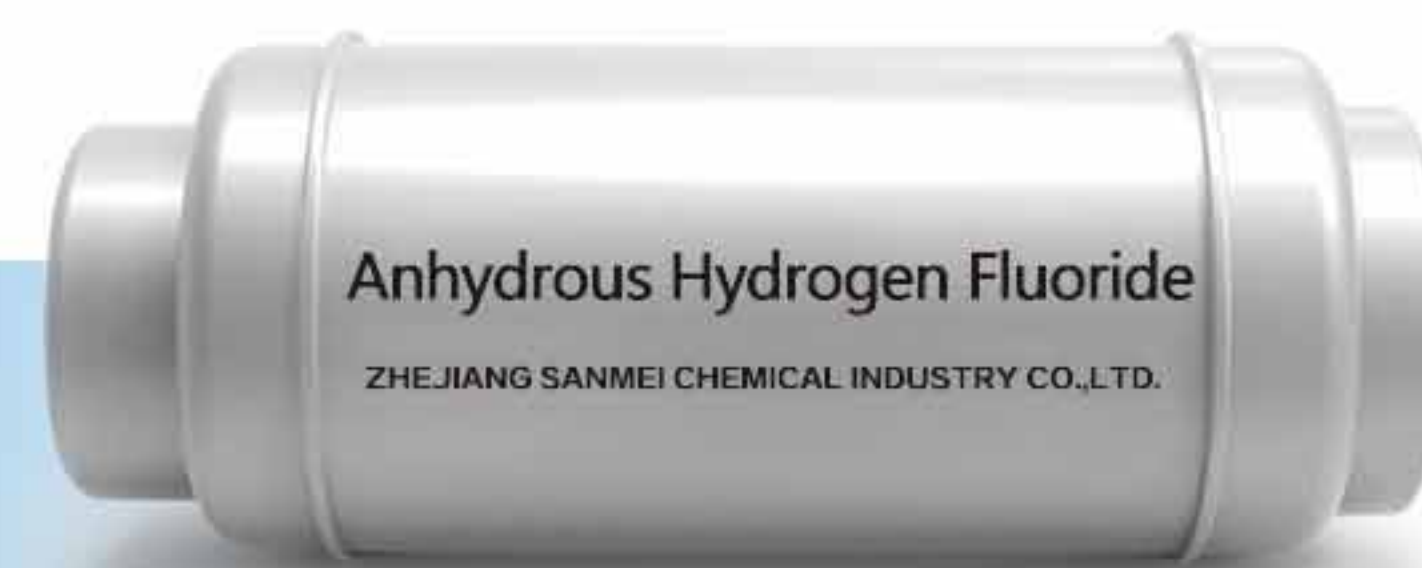
| | | | |
|--------------------------|-------|------------------------------|------------------|
| Molecular Weight | 20.01 | Equivalent Conductance (18℃) | 17.32Ω-1CM-1 |
| Boiling Point, °C | 107 | Appearance | Colorless, Clear |
| Density(sea level), g/ml | 1.157 | Odor | Pungent, Caustic |
| Freezing Point, °C | -46.3 | | |

Quality Standards (Q/KAIHN01-2019)

| ITEM | GRADE | | | | ITEM | GRADE | | | |
|-------------------------------------------|----------|----------|-----------|------------|------------------------------|----------|----------|-----------|------------|
| | EL grade | UP grade | UP-Sgrade | UP-SSgrade | | EL grade | UP grade | UP-Sgrade | UP-SSgrade |
| ASSAY % | 49±0.5 | 49±0.5 | 49±0.5 | 49±0.5 | Fe w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Coloration HU | ≤ 10 | ≤ 10 | ≤ 7 | ≤ 7 | Pb w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| H ₂ SiF ₆ w/(mg/kg) | ≤ 50 | ≤ 50 | ≤ 30 | ≤ 30 | Ti w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Cl w/(mg/kg) | ≤ 5 | ≤ 5 | ≤ 0.2 | ≤ 0.05 | Sb w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| NO ₃ w/(mg/kg) | ≤ 3 | ≤ 3 | ≤ 0.1 | ≤ 0.05 | Li w/(μg/kg) | ≤ 20 | ≤ 5 | ≤ 1 | ≤ 0.1 |
| PO ₄ w/(mg/kg) | ≤ 1 | ≤ 1 | ≤ 0.1 | ≤ 0.05 | Mg w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| SO ₄ w/(mg/kg) | ≤ 5 | ≤ 5 | ≤ 0.2 | ≤ 0.05 | Mn w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Al w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 | Mo w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| As w/(μg/kg) | ≤ 200 | ≤ 10 | ≤ 1 | ≤ 0.1 | Ni w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| B w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 | K w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Ba w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 | Ag w/(μg/kg) | ≤ 20 | ≤ 5 | ≤ 1 | ≤ 0.1 |
| Be w/(μg/kg) | ≤ 20 | ≤ 5 | ≤ 1 | ≤ 0.1 | Na w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Bi w/(μg/kg) | ≤ 20 | ≤ 5 | ≤ 1 | ≤ 0.1 | Pt w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Cd w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 1 | ≤ 0.1 | Sr w/(μg/kg) | / | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Ca w/(μg/kg) | ≤ 100 | ≤ 10 | ≤ 1 | ≤ 0.1 | Tl w/(μg/kg) | / | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Cr w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 | Sn w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Co w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 | V w/(μg/kg) | / | ≤ 10 | ≤ 1 | ≤ 0.1 |
| Cu w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 | Zn w/(μg/kg) | ≤ 50 | ≤ 10 | ≤ 10 | ≤ 10 |
| Ga w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 | Partical size ≥ 1.0 μm Ea/ml | ≤ 25 | / | / | / |
| Ge w/(μg/kg) | ≤ 20 | ≤ 10 | ≤ 1 | ≤ 0.1 | Partical size ≥ 0.5 μm Ea/ml | / | ≤ 25 | ≤ 5 | / |
| Au w/(μg/kg) | ≤ 20 | ≤ 5 | ≤ 1 | ≤ 0.1 | Partical size ≥ 0.2 μm Ea/ml | / | / | / | ≤ 20 |

Anhydrous Hydrogen Fluoride

Molecular Formula: AHF
HS Code: 2811119000
UN NO: 1052 Danger Class: 8/6.1



Applications:

Used in the production of fluoride salts, fluoroplastics, fluoro-rubber, fluoro-medicine, and in the agricultural pesticides industry.

Packaging: 330kg or 660kg steel cylinder; 15-20MT ISO tank.

Note: Our company which can produce 131,000 MT of AHF per year.

Physical Properties

| | | | |
|-------------------|-------|------------|------------------|
| Molecular Weight | 20.01 | Appearance | Colorless, Clear |
| Boiling Point, °C | 19.5 | Odor | Pungent, Caustic |

Quality Standards (GB 7746-2011)

| Index Name | Special-Grade | Excellent-Grade | 1st-Grade | Qualified Product |
|-------------------------------------|---------------|-----------------|-----------|-------------------|
| HF, % | ≥99.98 | ≥99.96 | ≥99.92 | ≥99.80 |
| H ₂ O, % | ≤0.005 | ≤0.02 | ≤0.04 | ≤0.06 |
| SO ₂ , % | ≤0.005 | ≤0.008 | ≤0.015 | ≤0.050 |
| H ₂ SO ₄ , % | ≤0.003 | ≤0.005 | ≤0.010 | ≤0.030 |
| H ₂ SiF ₆ , % | ≤0.005 | ≤0.005 | ≤0.010 | ≤0.050 |

Industrial Hydrofluoric Acid

Molecular Formula: BHF
HS Code: 2811119000
UN NO: 1052 Danger Class: 8/6.1

Applications: Used in the production of fluoride salts; to engrave and erode glass, to clean metal, and to treat surfaces.

Packaging: Polyethylene plastic 20L(25kg) drum, 30L(30kg) drum, 200L drum, ISO tank.

Note: The HF content of the product ranges 49-70% per customer requirements.

Physical Properties

| | | | |
|--------------------------|-----|--------------------|------------------|
| Molecular Weight | N/A | Freezing Point, °C | N/A |
| Boiling Point, °C | N/A | Appearance | Colorless, Clear |
| Density(sea level), g/ml | N/A | Odor | Pungent, Caustic |

Quality Standards (GB 7744-2008)

| | |
|--------------------------------------|-----------|
| HF, % | 30.0-70.0 |
| H ₂ SiF ₆ , %≤ | 0.02 |
| H ₂ SO ₄ , %≤ | 0.02 |
| Fe, %≤ | 0.005 |



CEO Greeting:

Sanmei is a privately owned company proudly headquartered in Wuyi, Zhejiang Province, nicknamed “The Hometown of Fluorite.” Over the past 15 years, Sanmei has grown exponentially, but we haven’t forgotten our roots. Today Sanmei is proud to be Wuyi’s largest employer, with over 2000 employees, all of whom grew up right here. Because Wuyi is our home, Sanmei has never allowed industrial growth to come at the expense of the local environment. We are proud that Wuyi has become a major tourist destination for the pristine natural environment that Sanmei has helped protect.

Thanks to our vast fluorite reserves, Sanmei is able to utilize only the safest and most efficient extraction techniques. We balance our growth aspirations with constant focus on our three core responsibilities: our customers, our families, and our surrounding environment. In China’s rapidly evolving business environment, we have built Sanmei to be the company our children can be proud of.

Today Sanmei is the largest manufacturer and distributor of AHF, and a leading producer of fluoride refrigerants (R22.R134a.R125.R32), ODS substitutes, foaming and cleaning agent HCFC-141b, and fluoride salt. Sanmei exports to more than 1,000 customers in over 50 countries. We have established a reputation for consistency and reliability, with sound and transparent management. I promise continuous improvement, and look forward to showing you why Sanmei is the right supplier for your chemical needs.

Faithfully yours,

Hanson Hu

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President and CEO

Zhejiang Sanmei Chemical Ind. Co., Ltd.



R134a



HS Code:29033990.90
UN NO: 3159
Danger Class: 2.2

Applications: Substitute of refrigerants R502 and R22, and extinguishing agents halon-1211 and halon-1301.

Packaging: Disposable cylinder 200g, 250g, 300g, 340g, 750g, 820-850g, 1000g, 7.5lb/3.4kg, 15lb/6.8kg, 30lb/13.6kg, 50lb/22.7kg; Recyclable steel cylinder 800L, 926L; ISO tank.

Physical Properties

| | | | |
|-------------------------|--------|----------------------------------------------|-------|
| Molecular Weight | 102.03 | Density of Saturated Liquid (25℃), g/ml | 1.207 |
| Boiling Point, ℃ | -26.1 | Specific Heat of Liquid 25℃, kJ/(kg·℃) | 1.51 |
| Melting point | -101 | Solubility in Water (25℃), % | 0.15 |
| Critical Temperature, ℃ | 101.1 | Vaporization Heat at Boiling Point, kJ/kg | 216.0 |
| Critical Pressure, MPa | 4.07 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Density, g/cm³ | 0.512 | Global Warming Potency (GWP ₁₀₀) | 1300 |

Quality Standards (GB/T 18826-2016)

| | | | |
|-----------------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | High Boiling Residue, ppm by volume | ≤50 |
| Odor | Odorless | Chloride, % | Pass |
| Purity, % | ≥99.90 | Foul Gas in Air Phase, % | ≤1.5 |
| Moisture, ppm | ≤10 | Unsaturated Olefin, ppm | ≤40 |
| Acidity (as HCl), ppm | ≤1 | | |

Quality Standards for Aerosol Cans (GB/T36765-2018)

| | | | |
|---------------|-------|-------------------------------------|-----|
| Purity, % | ≥99.9 | Acidity (as HCl), ppm | ≤1 |
| Moisture, ppm | ≤15 | High Boiling Residue, ppm by volume | ≤50 |

R125



HS Code: 29033990.90
UN NO: 3220
Danger Class: 2.2

Applications: Used as refrigerant.

Packaging: Disposable cylinder 22lb/10kg; Recyclable steel cylinder 926L; ISO tank.

Physical Properties

| | | | |
|---------------------------------|--------|----------------------------------------------|-------|
| Molecular Weight | 120.02 | Critical Density, g/cm³ | 0.571 |
| Boiling Point (760mmHg, ℃) | -48.45 | Heat of Evaporation, kJ/kg | 165.0 |
| Density of Liquid at 25℃, g/cm³ | 1.245 | Heat Capacity 25℃, Liquid, kJ/kg | 1.26 |
| Critical Temperature, ℃ | 66.05 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Pressure, MPa | 3.592 | Global Warming Potency (GWP ₁₀₀) | 3170 |

Quality Standards (HG/T 4633-2014)

| | | | |
|------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Moisture, ppm | ≤10 |
| Odor | Odorless | Acidity (as HCl), ppm | ≤1 |
| Purity, % | ≥99.5 | High Boiling Residue, ppm by volume | ≤100 |



R141b



HS Code: 2903791014

Applications:

Foaming agent as alternative to CFC11, and precision cleaning agent to substitute CFC-113.

Packaging:

Non-refillable cylinder 30lb/13.6kg; Steel drum in 30L/30kg, 200L; ISO tank.

Physical Properties

| | | | |
|-----------------------------------------------------|--------|----------------------------------------------|-------|
| Molecular Weight | 116.95 | Vapour Density (Air=1) | 4.1 |
| Boiling Point (1atm), ℃ | 32.05 | Solubility in Water at 25℃, W% | 0.509 |
| Critical Pressure, MPa | 4.34 | Vapour Pressure at 25℃, MPa | 0.079 |
| Critical Density, g/cm³ | 0.433 | Specific Heat (25℃), kJ/kg | 1.16 |
| Freezing Point (1atm), ℃ | -103.5 | Percent Volatiles by Volume (20℃) | 100.0 |
| Latent Heat of Vaporization at Boiling Point, kJ/kg | 223.0 | Critical Temperature, ℃ | 204.1 |
| Density of Liquid at 25℃, g/cm³ | 1.227 | Ozonosphere Damage Potency (ODP) | 0.086 |
| Conductivity of Heat Vapor (1atm, 25℃) mw/mk | 8.3 | Global Warming Potency (GWP ₁₀₀) | 782 |

Quality Standards (GB/T 18827-2002)

| | | | |
|---------------|------------------|--------------------------------------------|------|
| Appearance | Colorless, Clear | Acidity (as HCl), ppm | ≤1 |
| Odor | Odorless | High Boiling Residue, ppm by volume | ≤100 |
| Purity, % | ≥99.5 | Vinylidene Chloride+Dichloroacetylene, ppm | ≤200 |
| Moisture, ppm | ≤50 | | |



R142b



HS Code: 2903791015
UN NO: 2517
Danger Class: 2.1

Applications:

- Used as working fluid in high-temperature air-conditioners, heat pumps and temperature controllers.
- Used as component of blend refrigerants, including R22 and R142b (40:60 by mass).
- Used as a blowing agent applied in Polyurethane and Polyethylene foam.

Packaging: Recyclable steel cylinder 400kg/400L, 800kg/800L, 20MT bulk in ISO tank.

Physical Properties

| | | | |
|-------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 100.5 | Solubility in Water at 25℃, % | 0.14 |
| Boiling Point (1atm), ℃ | -9 | Specific Heat of Liquid 25℃, kJ/kg·℃ | 1.34 |
| Critical Temperature, ℃ | 137.1 | Ozonosphere Damage Potency (ODP) | 0.057 |
| Critical Pressure, Mpa | 4.12 | Global Warming Potency (GWP ₁₀₀) | 1980 |

Quality Standards (HG/T 4795-2014)

| | | | |
|----------------------|------------------|-------------------------------------|-----|
| Appearance | Colorless, Clear | Moisture, ppm | ≤10 |
| Odor | Odorless | Acidity (as HCl), ppm | ≤1 |
| Liquid Gas Purity, % | ≥99.8 | High Boiling Residue, ppm by volume | ≤50 |



R22

CHCLF₂

HS Code: 2903710000
UN NO: 1018
Danger Class: 2.2

Applications:

1. Used in reciprocating compressors.
2. Used as a refrigerant in industrial, commercial, and household air conditioning systems.
3. Used to produce insecticide and aerosol for spraying paint or extinguishing agent 1211.
4. R22 is the basic material used to produce a wide variety of fluorinated macromolecular compounds.

Packaging: Disposable cylinder 15lb/6.8kg, 22lb/10kg, 30lb/13.6kg, 50lb/22.7kg; Recyclable steel cylinder 40L, 400L, 800L; ISO tank.

Physical Properties

| | | | |
|---------------------------------------|---------|----------------------------------------------|-------|
| Molecular Weight | 86.47 | Critical Temperature | 96 |
| Boiling Point, °C | -40.8 | Critical Pressure, MPa | 4.91 |
| Relative Density(30°C), Liquid, g/cm³ | 1.18 | Ozonosphere Damage Potency (ODP) | 0.055 |
| Melting Point, °C | -146.00 | Global Warming Potency (GWP ₁₀₀) | 1760 |

Quality Index (GB/T 7373-2006)

| | | |
|-------------------------------------|------------------|------------------|
| Grade | Excellent Grade | First Grade |
| Appearance | Colorless, Clear | Colorless, Clear |
| Odor | Odorless | Odorless |
| Purity, % | ≥99.9 | ≥99.6 |
| Moisture, ppm | ≤10 | ≤30 |
| Acidity (as HCl), ppm | ≤0.1 | ≤1 |
| High Boiling Residue, ppm by volume | ≤100 | ≤100 |
| Foul gas in air phase, % (v/v) | ≤1.5 | ≤1.5 |

R406A

Refrigerant Components: R22/R600a/R142b (55/4/41)
HS Code: 3824740000 / 3824740015
UN NO: 3163 Danger Class: 2.2

Applications: Substitute of dichlorodifluoromethane (R12).

Packaging: Disposable cylinder13.6kg/30lb, 22.7kg/50lb; Recyclable steel cylinder 360kg/400L, 720kg/800L.

Physical Properties

| | | | |
|---------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 89.86 | Critical Pressure, MPa | 4.88 |
| Boiling Point, (1atm), °C | -32.7 | Ozonosphere Damage Potency (ODP) | 0.036 |
| Critical Temperature °C | 116.5 | Global Warming Potency (GWP ₁₀₀) | 1780 |

Quality Standards (AHRI 700-2019)

| | | | |
|------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Moisture, ppm | ≤10 |
| Odor | Odorless | Acidity (as HCl), ppm | ≤1 |
| Purity, % | ≥99.5 | High Boiling Residue, ppm by volume | ≤100 |



R32

CH₂F₂

HS Code: 29033990.90
UN NO: 3252
Danger Class: 2.1

Applications: Used as refrigerant, important component for the substitute of R22.

Packaging: Disposable cylinder 6.6lb/3kg; Recyclable steel cylinder, 40L/30kg, 926L/670kg; ISO tank.

Physical Properties

| | | | |
|----------------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 52.02 | Critical Density, g/cm³ | 0.430 |
| Boiling Point (1atm), °C | -52 | Latent Heat of Vaporization at BP kJ/kg | 390.5 |
| Melting Point, °C | -137 | Solubility in Water at 25°C, %by weight | 0.440 |
| Density of Liquid at 25°C, g/cm³ | 0.960 | Specific Heat of Liquid 25°C, kJ/kg °C | 2.35 |
| Vapour Pressure at 25°C, MPa | 1.705 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Temperature, °C | 78.52 | Global Warming Potency (GWP ₁₀₀) | 677 |
| Critical Pressure, Mpa | 5.808 | | |

Quality Standards (HG/T 4634-2014)

| | | | |
|---------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Acidity (as HCl), ppm | ≤1 |
| Odor | Odorless | Foul Gas in Air Phase, %(v/v) | ≤1.5 |
| Purity, % | ≥99.8 | High Boiling Residue, ppm by volume | ≤50 |
| Moisture, ppm | ≤10 | | |



R143a

CH₃CF₃

HS Code: 29033990.90
UN NO: 2035
Danger Class: 2.1

Applications: Used as refrigerant, as important component of the substitute for R502.

Packaging: Recyclable steel cylinder 260kg/400L, 926L; ISO tank.

Physical Properties

| | | | |
|--------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 84.04 | Density of Saturated Liquid (25°C), g/ml | 0.932 |
| Boiling Point, °C | -47 | Specific Heat of Liquid 25°C, [kJ/kg.°C] | 1.31 |
| Melting point | -117 | Solubility (water, 25°C)% | / |
| Critical Temperature, °C | 73.15 | Vaporization Heat Under Boiling Point, kJ/kg | 231.0 |
| Critical Density, g/cm³ | 0.455 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Pressure, MPa | 3.761 | Global Warming Potency (GWP ₁₀₀) | 4800 |

Quality Standards (HG/T 4794-2014)

| | | | |
|------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Moisture, ppm | ≤10 |
| Odor | Odorless | Acidity (as HCl), ppm | ≤1 |
| Purity, % | ≥99.5 | High Boiling Residue, ppm by volume | ≤100 |



R410A

Refrigerant Components: R32/ R125 (50/50)
HS Code: 3824780000
UN NO: 3163 Danger Class: 2.2

Applications: Used as refrigerant, replacement for R502.

Packaging: Disposable cylinder 11lb/5kg, 22lb/10kg, 25lb/11.3kg; Recyclable steel cylinder 926L; ISO tank.

Physical Properties

| | | | |
|------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 72.58 | Vapour Pressure at 25℃, MPa | 1.653 |
| Boiling Point, ℃ | -51.6 | Specific Heat of Liquid 30℃, [kJ/(kg℃)] | 1.78 |
| Critical Temperature,℃ | 72.5 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Pressure, MPa | 4.92 | Global Warming Potency (GWP ₁₀₀) | 1920 |

Quality Standards (HG/T 5162-2017)

| | | | |
|---------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Acidity (as Hcl), ppm | ≤1 |
| Odor | Odorless | High Boiling Residue, ppm by volume | ≤100 |
| Purity, % | ≥99.5 | Chloride, % | Pass |
| Moisture, ppm | ≤10 | Foul Gas in Air Phase, % | ≤1.5 |



R404A

Refrigerant Components: R125/R143a/R134a (44/52/4)
HS Code: 3824780000
UN NO: 3337 Danger Class: 2.2

Applications: Used as refrigerant, replacement of R502.

Packaging: Disposable cylinder 24lb/10.9kg; Recyclable steel cylinder 400L, 800L, 926L; ISO tank.

Physical Properties

| | |
|----------------------------------------------|-------|
| Molecular Weight | 97.6 |
| Boiling Point, ℃ | -46.8 |
| Critical Temperature℃ | 72.4 |
| Critical Pressure, MPa | 3.69 |
| Vapour Pressure at 25℃, MPa | 1.255 |
| Specific Heat of Liquid 30℃, kJ/(kg℃) | 0.38 |
| Ozonosphere Damage Potency (ODP) | 0 |
| Global Warming Potency (GWP ₁₀₀) | 3940 |

Quality Standards (HG/T 5161-2017)

| | | | |
|---------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Acidity (as Hcl), ppm | ≤1 |
| Odor | Odorless | High Boiling Residue, ppm by volume | ≤100 |
| Purity, % | ≥99.5 | Chloride, % | Pass |
| Moisture, ppm | ≤10 | Foul Gas in Air Phase, % | ≤1.5 |



R407C

Refrigerant Components: R32/R125/R134a (23/25/52)
HS Code: 3824780000
UN NO: 3340 Danger Class: 2.2

Applications: Used as refrigerant, replacement of R22.

Packaging: Disposable cylinder 22lb/10kg, 25lb/11.3kg; Recyclable steel cylinder 400L, 926L; ISO tank.

Physical Properties

| | | | |
|-------------------------|--------|----------------------------------------------|-------|
| Molecular Weight | 86.2 | Vapour Pressure at 25℃, MPa | 1.174 |
| Boiling Point, ℃ | -43.56 | Specific Heat of Liquid (30℃), kJ/(kg℃) | 1.51 |
| Critical Temperature, ℃ | 86.74 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Pressure, MPa | 4.619 | Global Warming Potency (GWP ₁₀₀) | 1620 |

Quality Standards (GB/T 38100-2019)

| | | | |
|---------------|------------------|-------------------------------------|------|
| Appearance | Colorless, Clear | Acidity (as Hcl), ppm | ≤1 |
| Odor | Odorless | High Boiling Residue, ppm by volume | ≤100 |
| Purity, % | ≥99.5 | Chloride, % | Pass |
| Moisture, ppm | ≤10 | Foul Gas in Air Phase, % | ≤1.5 |



R507A

Refrigerant Components: R125/R143a (50/50)
HS Code: 3824780000
UN NO: 3163 Danger Class: 2.2

Applications: Used as refrigerant, replacement of R22 and R502.

Packaging: Disposable cylinder 22lb/10kg, 25lb/11.3kg; Recyclable steel cylinder 400L, 800L, 926L; ISO tank.

Physical Properties

| | | | |
|------------------------|-------|----------------------------------------------|-------|
| Molecular Weight | 98.9 | Vapour Pressure at 25℃, MPa | 1.287 |
| Boiling Point, ℃ | -46.7 | Solubility (water,25℃), % | 0.89 |
| Critical Temperature,℃ | 70.62 | Ozonosphere Damage Potency (ODP) | 0 |
| Critical Pressure, MPa | 3.79 | Global Warming Potency (GWP ₁₀₀) | 3990 |

Quality Standards (AHRI 700-2019)

| | |
|-------------------------------------|------------------|
| Appearance | Colorless, Clear |
| Odor | Odorless |
| Purity, % | ≥99.5 |
| Moisture, ppm | ≤10 |
| Acidity (as Hcl), ppm | ≤1 |
| High Boiling Residue, ppm by volume | ≤100 |
| Chloride, % | Pass |
| Foul Gas in Air Phase, % | ≤1.5 |

