

## Nitrogen Trifluoride

NF<sub>3</sub> (IC)  
6000 NF<sub>3</sub>

Nitrogen Trifluoride is widely used in high energy chemical laser, electronic industry (IC) and solar photovoltaic industry. At present, Hohua Gas has the NF<sub>3</sub> production line with an annual capability of 6000 tons, and its production process and equipment are in the leading position in China.

NF<sub>3</sub> (IC)

NF<sub>3</sub>

NF<sub>3</sub> 71.002 -12  
9.06

NF<sub>3</sub> 800-1200 NF<sub>3</sub>  
200 NF<sub>3</sub> NF<sub>3</sub>  
100  
NF<sub>3</sub> NF<sub>3</sub> H<sub>2</sub>  
NF<sub>3</sub> NF<sub>3</sub>  
70 NF<sub>3</sub>

NF<sub>3</sub>

: OSHA: PEL=10ppm. ACGIH: TWA/TLV=10ppm. NIOSH: 1000ppm.

(SCBA)

NF<sub>3</sub>

1500psig

NF<sub>3</sub>

52

47L

DOT

470L Y

**Physical and chemical properties:** NF<sub>3</sub> is a colorless, stable and toxic gas at room temperature and atmospheric pressure. The relative molecular weight is 71.002, and the boiling point is - 129.06 °C.

NF<sub>3</sub> is stable at room temperature, but decomposes violently at 800~1200 °C; NF<sub>3</sub> is a potential oxidant, especially at about 200 °C, its reactivity is equivalent to that of oxygen; NF<sub>3</sub> is mainly used as a fluorination agent when it reacts with other elements; NF<sub>3</sub> does not react with water, dilute acid and dilute alkali solution at room temperature, but slowly hydrolyzes to form nitrite and fluorine when it contacts with alkaline solution at 100 °C. Chemically, NF<sub>3</sub> can react violently with water under the action of electric spark; NF<sub>3</sub> can react rapidly with H<sub>2</sub> or hydrides and release a lot of heat, which is the basis of NF<sub>3</sub> used in high energy chemical lasers; NF<sub>3</sub> can interact with organics, but it usually needs to raise the temperature to initiate the reaction, so it often explodes; when the temperature is lower than 70 °C, NF<sub>3</sub> gas does not corrode ordinary metals, so steel and stainless steel can be used. Nickel, copper, aluminum and other materials manufacturing related equipment.

**Safety data:**

NF<sub>3</sub> is a kind of poisonous and nonflammable compressed gas;

No smell, but the impurities in it make it smell moldy;

Exposure limit: OSHA: pel = 10ppm. ACGIH: TWA / TLV = 10ppm. NIOSH: 1000ppm. Se  
If contained breathing apparatus (SCBA) is required when entering the discharge  
area with concentration exceeding the exposure limit;

Oxidants can cause or promote the combustion of metal and non-metal substances,  
especially when the temperature is over 200 ; the combustion products are to  
xic;

Any system using NF3 shall be free of oil, grease and other organic matters;

The cylinder stored in the cylinder with the pressure less than 1500psig and NF  
3 is not allowed to be used, stored and transported in the environment higher t  
han 52 .

**Package specification:**

Package: high pressure seamless carbon steel cylinder

Package specification: 47l national standard or dot bottle, 470l y bottle, etc.

GB/T 21287-2007

(	Item volume percent)	Institute Standard Q/LMY106-2009
	$\text{NF}_3, \times 10^{-2}$	
	$\text{N}_2, \times 10^{-6}$	
	$\text{O}_2 + \text{Ar}, \times 10^{-6}$	
	$\text{CF}_4, \times 10^{-6}$	
	$\text{CO}, \times 10^{-6}$	

$\text{CO}_2, \times 10^{-6}$

$\text{N}_2\text{O}, \times 10^{-6}$

$\text{SF}_6, \times 10^{-6}$

Acidity(as HF),  $\times 10^{-6}$

$\text{H}_2\text{O} \quad , \times 10^{-6}$

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