BORON-10 TRIFLUORIDE ($^{10}BF_3$)

Boron-10 trifluoride ($^{10}BF_3$) is a form of stable isotope of Boron-10. It is enriched from naturally occurring abundance up to 95 at%. Boron-10 trifluoride is one of stable isotopes produced by our company for any industrial applications.

We offer secure supply, consistent product quality and the ability to custom engineer products for your unique applications. Our team are experts at solving materials-related problems in the demanding from nuclear to semiconductor industries.

^{10}BF3 is a non-flammable compressed gas packaged and shipped in cylinders under high pressure. It is one of the strongest Lewis acids, which are also known as electron pair acceptors. In gas form, it reacts with chemicals containing oxygen, nitrogen, sulfur, and other electron pair donors to form addition or coordination compounds.

^{10}B Enriched Boron trifluoride is enriched in the ^{10}B isotope up to 95 at% and is an extremely proficient neutron absorber and include accepted quality standards of many of industrial applications.

Boron-10 Enriched Boron Trifluoride Properties	
Compound Formula	$^{10}BF_3$
CAS Number	15875-25-9
Enrichment	95% atomic
Chemical Purity	≥ 99 wt.%
Molecular Weight	66.97 @ 99% ^{10}B
Appearance	Clear in an inert atmosphere. Forms a dense white cloud
Boiling Point	-100 °C at 1,013 hPa
Melting Point	-128.4 °C
Density	1.139 g/cm^3
IUPAC Name	Trifluoro borane

Packaging

^{10}BF3 is a non-flammable compressed gas packaged and shipped in cylinders under high pressure. Exir offers Boron-10 Trifluoride in returnable cylinders. When empty, these cylinders weigh approximately 59 kg and 51 kg respectively. Each cylinder is filled with about 25 kg at a pressure of approximately 9500 kPa.

Storage, Handling and Safety

Cylinders in ^{10}BF3 service must be requalified by hydrostatic test every five years. Cylinders must be supported and secured to a solid structure to prevent them from tipping over.

The valve cap should always be in place when the cylinder is not in use or when the cylinder is being moved. Full cylinders should be stored separately from empty cylinders in areas clearly marked for those purposes.

The cylinder valve has a 0.825" - 14 National Gas Thread Outlet connection with a lefthanded external thread (designated as CGA 330). A full-face Kel-F® (Neoflon®) gasket is provided in the outlet cap to provide a seal. The outlet cap should be in place whenever the cylinder is not connected to the process, to minimize the accumulation of moisture in the valve outlet and subsequent formation of corrosion scale in the valve discharge port. Cylinders should be connected to the process using a stainless steel flexible tubing pigtail with a welded CGA 330 female fitting to mate with the cylinder valve outlet. The process and connection may be of any appropriate high pressure fitting. Flexible hoses should not be used in $^{10}BF_3$ service, CGA fittings should be sealed using a Kel-F® (Neoflon®) or PTFE gasket.

Do not apply heat to the outside of the cylinder or otherwise attempt to completely empty the cylinder. A nominal positive pressure (<20 psig) should be left in the cylinder.