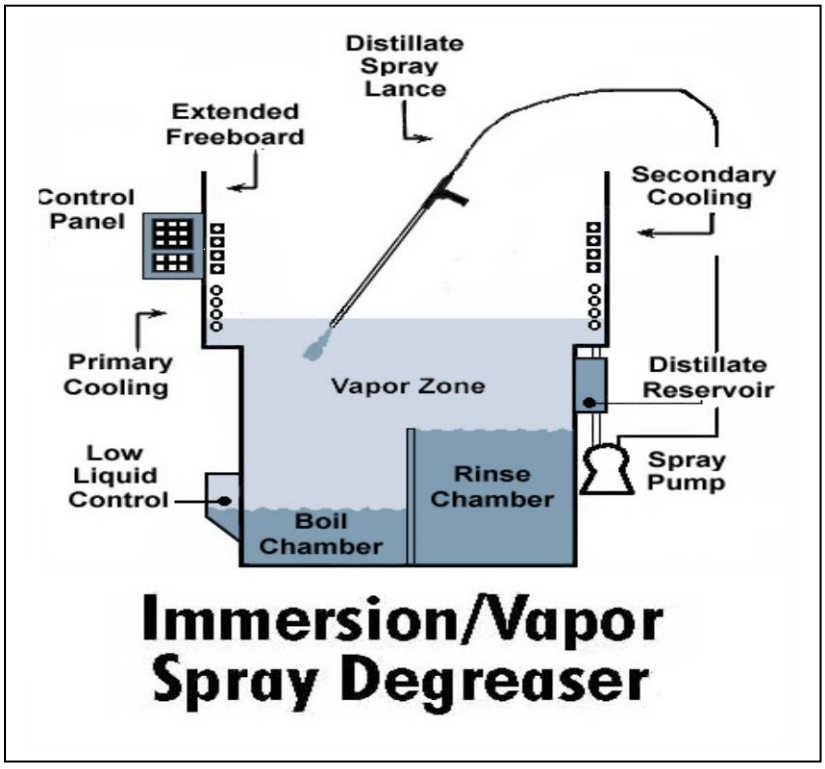
Technical Data Sheet

Tech Kleen ®* AZE Stabilized N propyl bromide
General Cleaning Solvent

Description TECH KLEEN AZE Stabilized is an azeotrope of N propyl bromide and alcohol specially formulated to remove contaminants such as oils, greases, adhesives, resins, and flux residues.
In electronics applications, the AZE will remove solder flux, paste and ionic contamination from circuit boards. Tech Kleen AZE Stabilized n Propyl Bromide is a direct replacement for 1,1,1-trichloroethane, trichloroethylene, HCFC-141b, HCFC-225, hydrofluorocarbons, methylene chloride and perchlorethylene. The proper safety methods should always be in place when using Tech Kleen AZE and you may contact Enviro Tech International, Inc. for recommendations.

Process Tech Kleen AZE is designed for use in a vapor degreasing process. The product can be used in existing vapor degreasing equipment (batch or in line), but emission control retrofits may be useful in reducing vapor losses. If existing equipment is utilized, it is necessary to adjust temperature control settings. Enviro Tech International, Inc. has developed users recommendations that cover the operation of TECH KLEEN and vapor degreasing process. Topics discussed in the include process parameters, equipment start-up and operational procedures, solvent maintenance, and health and safety, and disposal information. If converting from another solvent to a Tech Kleen product, please consult the operator manual and your Enviro Tech International, Inc. representative. We also can send you a copy of the NESHAP standard for vapor degreasing.



*Tech Kleen is a registered trademark of Enviro Tech International, Inc.

TYPICAL Properties The physical and environmental properties of Tech Kleen AZE Stabilized n Propyl Bromide are compared to other halogenated solvents in Table 1.

Table 1

	NPB	111-TCA	TCE	MCl	HCFC-141b	HCFC-225
Boiling Point	156°F (68°C)	165°F (74°C)	189°F (87°C)	104°F (40°C)	90°F (32°C)	129°F (54°C)
Flash Point (TCC)	None	None	None	None	None	None
Kauri Butanol (KB)	124	124	129	136	56	31
Specific Gravity @ 25°C	1.29	1.32	1.46	1.33	1.24	1.55
Vapor Pressure @ 20°C	110.8 mm Hg	100 mm Hg	57.8 mm Hg	349 mm Hg	592 mm Hg	283 mm Hg
Evaporation Rate (TCA = 1)	0.96	1	0.57	1.64	>1	>1
Atmospheric Lifetime	16 days	5 years	<1 year	<1 year	10 years	5 years

Compatibility In this test, metal coupons were submerged halfway in the refluxing fluid for twenty-four hours. The following metals showed no signs of corrosion.

Table 2.

Aluminum	Iconel	316 Stainless Steel
Brass /Copper	Monel	Titanium
Carbon Steel	Nickel	Zinc

The compatibility of aluminum with Tech Kleen AZE Stabilized n Propyl Bromide was further tested by scratching an aluminum coupon beneath the surface of the solvent. Several hours elapsed before signs of corrosion were noticed. In contrast, when 1,1,1-trichlorethane is subjected to the same test, corrosion can be seen immediately. The table on the following page details the results of compatibility testing with selected plastic and elastomeric materials. This table is intended only as a general guide. Enviro Tech International, Inc. recommends that you test compatibility with the particular materials in question under your actual use conditions.

Effects of TechKleen AZE N-Propyl Bromide on Plastics and Elastomers

Table 3. ELASTOMERS

COMPATIBLE	NON-COMPATIBLE
	ACRYLONITRILE-BUTADIENE (BUNA N)
BUTADIENE NITRILE	ETHYLENE PROPYLENE (TERPOLYMER)
BUTADIENE STYRENE	ISOBUTYLENE-ISOPRENE
BUTYL	NATURAL RUBBER
CHLOROPRENE	POLYCHLOROPRENE (NEOPRENE)
CHLOROSULPHONATE POLYETHYLENE	POLYSILOXANE (SILICONE)
EPICHLOROHYDRIN 956	POLYURETHANE
ETHYLENE-PROPYLENE	
PERFLUORO-ELASTOMER (VITON A, B)	
PERFLUORO-ELASTOMER (CHEMRAZ)	
POLYETHER-URETHANE	
POLYSULPHIDE	
VINYL-METHYL SILOXANE	

PLASTICS

COMPATIBLE	NON-COMPATIBLE
ACETAL (DELRIN)	ABS
CHLORINATED PVC	ACRYLIC
EPOXY	CELLULOSE ACETATE
FLUORETHYLPROPYLENE	POLYCARBONATE (LEXAN)
HIGH DENSITY POLYETHYLENE	POLYETHYLENE TERAPHTHALATE GLYCOL MODIFIED
IONOMER RESIN	POLYSTYRENE
METHYLMETHACRYLATE	POLYVINYL CHLORIDE CLEAR MOULDING COMPOUND
NYLON (POLYAMIDE)	
POLYAMIDE	
POLYESTER (MYLAR)	
POLYETHER ETHER KETONE (ARLON)	
POLTETHERIMIDE (ULTEM)	
POLYETHYLENE TERAPHTHALATE	
POLYIMIDE	
POLYOXYMETHYLENE	
POLYPHENOLENE SULFIDE (RYTON)	
POLYPROPYLENE	
POLYTETRAFLUOROETHYLENE	
POLYVINYL CHLORIDE (RIGID PIPE	

COMPOUND)	
POLYVINYLIDENE FLUORIDE (KYNAR)	
VINYLESTER COMPOSITE	

Environmental and Regulatory
Table 4

National Emissions Standards for Hazardous Air Pollutants (NESHAP)	Not regulated
Superfund Amendments and Reauthorization Act (SARA)	Not regulated
Resource Conservation and Recovery Act (RCRA)	Not regulated
Hazardous Air Pollutant (HAP)	Not regulated
Volatile Organic Compound (VOC)	Yes
EPA Significant New Alternatives Program (SNAP)	Yes*
Ozone Depletion (ODP)	0.013-0.018
Global Warming Potential (GWP)	Low

*Precision and metals cleaning

Safety and Toxicity Warning! TechKleen AZE should be used in a controlled and contained area where exposure levels on MSDS sheet are achieved. Proper personal protective equipment such as chemical resistant gloves, clothing , respirator and safety glasses should be used. Refer to MSDS for further information

Disposal Enviro Tech International, Inc. recommends contacting us as we offer a waste take away disposal service. The most common and economical method of disposal is incineration of used material in compliance with all applicable government regulations. Used Tech Kleen AZE Stabilized n Propyl Bromide can also be delivered to a solvent reclaimer. Please contact Enviro Tech International, Inc. for details.

Packaging Tech Kleen AZE Stabilized n Propyl Bromide is available in 5-gallon pails (50 lb, 60 lb
gross) and 55-gallon drums (550 lb net, 589 lb gross).

Storage Tech Kleen Stabilized n Propyl Bromide AZE should be stored in the original container at temperatures below 140ºF (60ºC).

Shelf Life The shelf life for this product is three years when it is stored in its original, sealed container at room temperature.