

EnSolv[®]-5408 Technical Data Sheet

DESCRIPTION

EnSolv[®]-5408 is the only Boeing approved, stabilized n-Propyl Bromide based solvent for the replacement of Trichloroethylene, Perchloroethylene and 1,1,1-Trichloroethane in aerospace vapor degreasing. EnSolv[®]-5408 is listed as an approved material on Boeing's BMS 11-11 specification for use under BAC 5408. In addition, EnSolv[®]-5408 has been approved by Bell Helicopter under Materials Bulletin 1918 for vapor degreasing. EnSolv[®]-5408 is a patented azeotropic mixture that can be distilled and reused through numerous cycles before it needs to be replaced. Although Enviro Tech offers stabilizer booster in 5-gallon pails, the synergistic action of EnSolv[®]-5408's patented stabilizer package typically precludes the need to ever add stabilizers to maintain the integrity of the solvent through normal use.

MATERIALS COMPATIBILITY

EnSolv[®]-5408 is compatible with all metals and many plastics and other materials typically cleaned in vapor degreasers. EnSolv[®]-5408 has passed all stress corrosion and hydrogen embrittlement tests for titanium. For a full list of compatibility recommendations, refer to the "Materials Compatibility" document available for download at www.envirotechint.com. Any materials not listed in this document should be tested for compatibility in the conditions of use.

HEALTH & SAFETY

EnSolv[®]-5408 is a non-flammable, non-carcinogenic solvent mixture that is safe to use in many applications. Enviro Tech recommends that safe work practices are implemented whenever handling chemicals of any kind to minimize exposure levels and prevent toxic effects. Please refer to the EnSolv[®]-5408 Material Safety Data Sheet or the EnSolv FAQs on the website for more specific information on workplace exposure levels, toxicity and personal safety recommendations.

REGULATORY INFORMATION

EnSolv[®]-5408 is classified as non-hazardous for transport by the U.S. DOT. For international shipments, EnSolv[®]-5408 is exempt from classification as a flammable material per Special Provision A3 under Sub Section 4.4 in the IATA shipping manual. Spent EnSolv[®]-5408 is classified as a non-hazardous waste unless RCRA hazardous contaminants are deposited into the material through a cleaning process.

The principal component of EnSolv[®]-5408, n-Propyl Bromide, is currently classified as 100% Volatile Organic Compound (VOC). Enviro Tech has petitioned the U.S. EPA for VOC exempt status based on low atmospheric reactivity derived from independent testing. The U.S. EPA has approved n-Propyl Bromide under the Significant New Alternatives Policy (SNAP) as a suitable replacement for ozone depleting chemicals. N-Propyl Bromide has been shown to neither deplete the ozone layer nor contribute significantly to global warming.

PROCESS CONTROLS & MAINTENANCE

Prior to charging a piece of equipment with EnSolv[®]-5408, the equipment should be thoroughly cleaned and neutralized according to the procedure listed in the "Preparing Equipment to Switch to EnSolv" document available for download at www.envirotechint.com. After the equipment is up and running with EnSolv[®]-5408, the acid acceptance levels of the solvent should be monitored on a regular basis with an Acid Acceptance Test Kit, available from Enviro Tech. EnSolv[®]-5408 can be distilled and reused through numerous cycles before losing its capacity to neutralize acid residues. If acid acceptance levels ever reach 29 drops or greater (<0.10% NaOH by weight), remove the solvent from the tank and replace with virgin EnSolv[®]-5408.

DISTILLATION AND DISPOSAL OF SPENT SOLVENT

EnSolv[®]-5408 should be disposed of once the boil temperature reaches the 168-173°F (75-78°C) range. At this point, soil loading levels have reached approximately 35-40% by volume. Enviro Tech has a spent EnSolv[®]-5408 disposal and/or recycling service through its partner, Veolia Environmental Services. Contact an Enviro Tech representative for more information on participating in this program.

VAPOR DEGREASER SETTINGS

The following are recommended settings for temperature and safety sensors on a typical vapor degreaser using EnSolv[®]-5408. Certain features are optional and may not be present on a particular piece of equipment. Refer to the vapor degreaser manual from the equipment manufacturer and the "Vapor Degreaser Settings" document available for download at www.envirotechint.com for more technical information.

Refrigeration Thermostat (RT)	7°C / 45°F
Safety Vapor Control (SVC)	64°C / 148°F
High Temperature Control (HTC)	76°C / 168°F
Liquid Temperature Control/Sensor (LTC/LTS)	73°C / 163°F
Vapor Up Thermostat (VU/TH)	64°C / 148°F

SOLVENT PROPERTIES

Typical Physical Properties	
Boiling Point (°C / °F)	70° / 158°
Specific Gravity @ 75°F (H ₂ O=1)	1.31
Flash Point TCC (°C)	None
Base material meets ASTM-D 6368	Yes
Flammability Limits (vol. %) based on n-Propyl Bromide	3.8 - 9.5 %
Vapor Pressure @ 25°C (mm Hg)	134
Vapor Density (Air = 1)	4.2
Evaporation Rate (Butyl Acetate = 1)	4.7
Specific Heat @ 25°C (cal/g)	0.26
Dielectric Strength (AC Volts)	21,000
Appearance	Clear & free of suspended matter

Cleaning, Corrosivity, Residue	
Kauri Butanol Number	130
Corrosion of Metals	Does not corrode carbon steel, copper, stainless steel, aluminum, magnesium or titanium.
Acid Acceptance, as NaOH (wt. % min.)	>0.19
Free Halogen	Passes Test
Non-Volatile Residue (ppm / wt. % max.)	10 / 0.0010
Acidity, as HCL (wt. % max.)	0.0010
Water (wt. % max.)	0.015

PACKAGING & AVAILABILITY

EnSolv[®]-5408 is available in the following container sizes and weights:

1 Gallon Pail	11 lbs.
5 Gallon Pail	55 lbs.
30 Gallon Drum	326 lbs.
55 Gallon Drum	600 lbs.
Bulk Tanker or Tote	Variable

The approximate weight of EnSolv[®]-5408 is 11 pounds per gallon. EnSolv[®]-5408 is maintained in inventory and most orders received prior to 12:00 pm CST ship on the same day. Contact an Enviro Tech representative for pricing, availability and technical questions.

The above represents typical properties of EnSolv[®]-5408 Vapor Degreasing and Cleaning Solvent, but do not represent any other product specification. Other EnSolv[®] products have similar characteristics, but are not necessarily identical to the properties listed above. For specific values and specifications, consult the product's Certificate of Analysis.