



# **DESCRIPTION**

EnSolv<sup>®</sup>-5408 is a Boeing approved, stabilized n-Propyl Bromide based solvent for the replacement of Trichloroethylene, Perchloroethylene and 1,1,1-Trichloroethane in aerospace vapor degreasing. EnSolv<sup>®</sup>-5408 is listed as an approved material on Boeing's PSD 6-62 specification for use under BAC 5408. In addition, EnSolv<sup>®</sup>-5408 has been approved by other aerospace organizations, such as Bell Helicopter, Bombardier and many others. EnSolv<sup>®</sup>-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<sup>®</sup> -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<sup>®</sup>-5408 is compatible with all metals and many plastics and other materials typically cleaned in vapor degreasers. EnSolv<sup>®</sup>-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 <a href="https://www.envirotechint.com">www.envirotechint.com</a>. Any materials not listed in this document should be tested for compatibility in the conditions of use.

#### **HEALTH & SAFETY**

EnSolv<sup>®</sup>-5408 is a non-flammable 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<sup>®</sup>-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<sup>®</sup>-5408 is classified as non-hazardous for transport by the U.S. DOT. For international shipments, EnSolv<sup>®</sup>-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<sup>®</sup>-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<sup>®</sup>-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<sup>®</sup>-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 <a href="https://www.envirotechint.com">www.envirotechint.com</a>. After the equipment is up and running with EnSolv<sup>®</sup>-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<sup>®</sup>-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<sup>®</sup>-5408 or dump boil sump solvent to a still.

#### DISTILLATION AND DISPOSAL OF SPENT SOLVENT

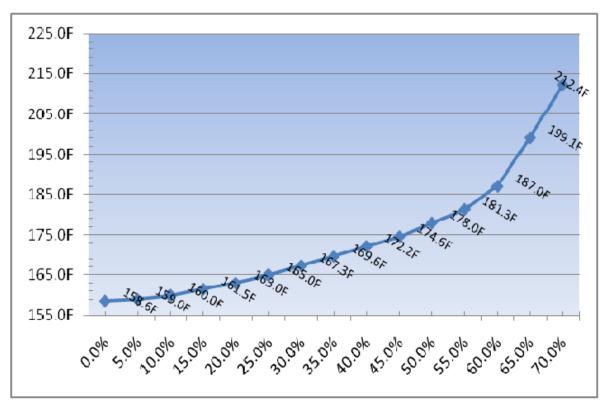
EnSolv<sup>®</sup>-5408 should be disposed of once the boil temperature reaches the 165°F point, per PSD 6-62. At this point, soil loading levels have reached approximately 30-35% by volume. Enviro Tech has a spent EnSolv<sup>®</sup>-5408 disposal and/or recycling service through its partner, Veolia Environmental Services, and also through WRR Environmental Services



(based in Eau Claire, WI). There is little or no cost to participate in either program. Contact an Enviro Tech representative for more information on participating in this program.

# EnSolv® Boiling Point vs. Weight % Soil Chart

(Soil consists of typical machining oils)



# **VAPOR DEGREASER SETTINGS**

The following are recommended settings for temperature and safety sensors on a typical vapor degreaser using EnSolv<sup>®</sup>-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 <a href="https://www.envirotechint.com">www.envirotechint.com</a> for more technical information.

Refrigeration Thermostat (RT)	45°F
Safety Vapor Control (SVC)	148°F
High Temperature Control (HTC)	166°F
Liquid Temperature Control/Sensor (LTC/LTS)	165°F
Vapor Up Thermostat (VU/TH)	148°F

Adhering to these settings, especially the HTC and LTC settings will ensure compliance with PSD 6-62 boil temperature requirements.



# **SOLVENT PROPERTIES**

Typical Physical Properties		
Boiling Point (°C / °F)	70° / 158°	
Specific Gravity @ 75°F (H <sub>2</sub> O=1)	1.31 +/- 0.01	
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.)	>0.25	
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<sup>®</sup>-5408 is available in the following container sizes and weights:

5 Gallon Pail 55 lbs (25 kg)
30 Gallon Drum 326 lbs (148 kg)
55 Gallon Drum 551 lbs (250 kg)
Bulk Tanker or Tote Variable

The approximate weight of EnSolv<sup>®</sup>-5408 is 10.93 pounds per gallon. EnSolv<sup>®</sup>-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.