

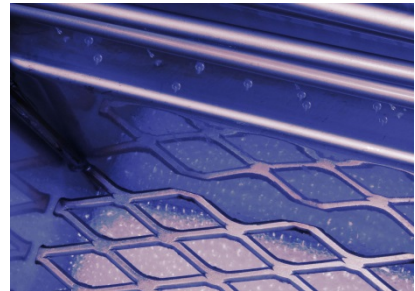


PRECISION V

VC1600

VAPOR-DEGREASER
FLUX REMOVER

Part # 1656



Introduction



Techspray has engineered solvent cleaners that offer exciting new options for precision cleaning. Precision-V cleaners are powerful, leave no residue, evaporate extremely fast, and are non-flammable with no flash-point. Electronics, optics, and metal parts are quickly and thoroughly cleaned, eliminating the need for further rinsing. Precision-V is non-ozone depleting, so ideal replacements for cleaners containing Freon, HFC-141b and AK225.

Flux Removers clean R, RA, RMA and No-Clean type flux residues after high temperature reflow, wave and hand-soldering, ideal for lead and lead-free processes.

Precision-V Vapor-Degreaser Flux Remover has azeotrope-like properties that allow it to maintain stable properties as it is cycled in a vapor-degreaser. It is neither reactive nor corrosive to metals commonly found in the construction of vapor-degreasers.

Exposure to Precision-V solvents is less hazardous than many other solvents commonly used in vapor-degreasers: e.g. TCE (Trichloroethylene, CAS #79-01-6), nPB (n-Propyl Bromide, CAS #106-94-5), and Perc (Perchloroethylene, CAS #127-18-4).

Precision-V solvents have a lower boiling point than most other vapor-degreaser solvents. This reduces heat-stress on components being cleaned and reduces energy consumption from the boil sump and chiller coils.

Cross References

Similar solvent characteristics as the following:

- Asahiklin AK225 ATE – Techspray part #1658
- DuPont™ Vertrel® SFR

Features / Benefits

- HFC blend with Azeotrope-like Properties – Ideal for Vapor-Degreasers
- Designed to remove lead-free and no-clean flux residues
- Much Safer Than nPB and TCE
- Non-Flammable
- Non-Ozone Depleting
- Residue-Free
- Rapid Evaporation
- Low Boiling Point – Lower Heat-Stress, Lower Energy
- SNAP (Significant New Alternatives Policy) approved chemistry

Applications

- Used in vapor-degreasers and as cold cleaner
- Removes flux residues resulting from soldering and/or PCB assembly
- Effective on most flux types including no-clean
- Effective for lead and lead-free soldering processes
- Also able to remove heavy industrial soil off parts

NOTE: As with all vapor degreaser equipment and processes, observe all safety precautions, guidelines and operating rules associated with these units. Failure to do so may put operations personnel at risk. Avoid excessive vapor losses, loss of refrigeration, excessive boil sump heat, etc. Make sure all equipment is operated in accordance with the manufacturer's guidelines and instructions. If in doubt, contact your manufacturer immediately.



Solvent Reclaim Program

This product can be reclaimed as a part of Techspray's ForeverSolv™ Solvent Reclaim Program. The ForeverSolv program is designed to be a no-hassle process. Techspray picks up the dirty solvent and drops off cleaned solvent a month later. We do all the work, while you reduce your solvent usage and disposal costs. Since Techspray is handling the process, you can be assured the tightest tolerances are maintained. We certify every drum provided back to you, and include a certificate of analysis (COA).

Techspray offers 2 quality grades:

- **Reclaim Grade** – Distillation to remove water, oils and solids (e.g. flux resin, particulates)
- **Top Grade** – Distillation process as described above, then rebalanced to within 1% of original solvent specifications

Reclaim Grade is the best value for non-critical applications like general metal cleaning. For high precision applications, Top Grade still reduces your cost, but maintains tighter tolerances. This choice allows you to reclaim over-and-over without degradation.

NOTE: Program available for continental US customers only.

Chemical Components

Component	CAS#
1,1,1,2,2,3,4,5,5,5-decafluoropentane (HFC-4310mee)	138495-42-8
1,2-transdichloroethylene	156-60-5
1,1,1,3,3-pentafluorobutane	406-58-6
Methanol*	67-56-1

*California Prop. 65 WARNING: *This product contains methanol, known to the state of California to cause birth defects or other reproductive harm.*

Chemical Properties (MSDS available on request)

- EXPOSURE LIMIT: >200 ppm (calc. AEL weighted average)
- PHYSICAL STATE: Liquid
- ODOR: ethereal
- APPEARANCE: Clear, Colorless liquid
- PERCENT VOLATILE: 100
- VAPOR PRESSURE: 211.5 mmHg@ 25°C (VOC Composite Vapor Pressure)
- VAPOR DENSITY: > 1 (Air=1)
- INITIAL BOILING POINT: 38°C (100.4°F)
- FLASHPOINT AND METHOD: None to boiling point --- TAG Closed Cup
- DENSITY: 1.29 at 25°C
- VOC: 862.5 g/L (EPA)
- SURFACE TENSION: 19 dynes/cm

Exposure Limit Comparison

CLEANER	Toxicity (wt ave of TLV)
Precision-V VC1600, 1656	>200 ppm
n-Propyl Bromide (nPB)	10 ppm
Trichloroethylene (TCE)	10 ppm
Perchloroethylene (Perc)	25 ppm
DuPont Vertrel SMT	200 ppm
3M Novec 72DA	200-300 ppm

Boiling Point Comparison

CLEANER	Boiling Point
Precision-V VC1600, 1656	100°F / 38°C
n-Propyl Bromide (nPB)	154°F / 68°C
Trichloroethylene (TCE)	188°F / 87°C
Perchloroethylene (Perc)	250°F / 121°C
DuPont Vertrel SMT	99°F / 37°C
3M Novec 72DA	113°F / 45°C

Compatibility

Precision-V cleaners are generally compatible within normal operating conditions of vapor degreaser and with exposed materials normally found with the equipment. Specific plastic and elastomeric formulations vary with manufacturers; therefore, we recommend compatibility verification when required.

Reclamation Process

The reclamation (i.e. boil down) process utilizes the vapor-degreaser as a still to distill solvent from the dirty boil sump and allows you to reclaim and reuse this solvent.

When it is determined that the Boil Sump needs to be cleaned out, you should do the following things to boil down the solvent:

1. If you have a 2 sump vapor-degreaser, drain the rinse sump into a clean container for reuse. If you have a one-sump vapor-degreaser, drain the spray reservoir using the spray wand. This material should be collected in a clean container, so it can be reused.
2. Allow the solvent to continue to boil, and the vapors to condense, until such time as one of two things happens:
 - a. the High Temperature Control (HTC) trips and turns off the heat to the heating elements or
 - b. the Liquid Level Control trips because the level in the Boil Sump is too low.
3. Drain the remaining solvent/soil mixture into a container that is labeled as Hazardous Waste. This material can be used in future "boil downs" to reclaim more of the solvent in the mixture.
4. Use the retained solvent (from step 1) to refill the vapor-degreaser and add whatever volume of solvent is necessary to completely fill the machine.

This process can be repeated as often as necessary, depending on the amount of usage of the vapor-degreaser and the amount of soil that is introduced into the vapor-degreaser.

When you "boil down", always put the solvent/soil mixture into the vapor-degreaser to reclaim additional amount of the solvent from this mixture.

Environmental Policy

Techspray® is committed to developing products to ensure a safer and cleaner environment. We will continue to meet and sustain the regulations of all federal, state and local government agencies.

Packaging and Availability

Precision-V Vapor-Degreaser Flux Remover available in the following sizes:

1656-G 1 gal (3.8L) in glass bottle
1656-5G 50 lbs in 5 gal (18.9L) metal drum
1656-54G 580 lbs in 54 gal (204L) metal drum

Precision-V Vapor-Degreaser Flux Remover available for Reclaim:

1656R-54G 580 lbs in 54 gal (204L) metal drum, Reclaim Grade
1656T-54G 580 lbs in 54 gal (204L) metal drum, Top Grade

Resources

Techspray® products are supported by global sales, technical and customer services resources.

For additional technical information on this product or other Techspray® products in the United States, call the technical sales department at 800-858-4043, email tsales@techspray.com or visit our web site at: www.techspray.com.

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