

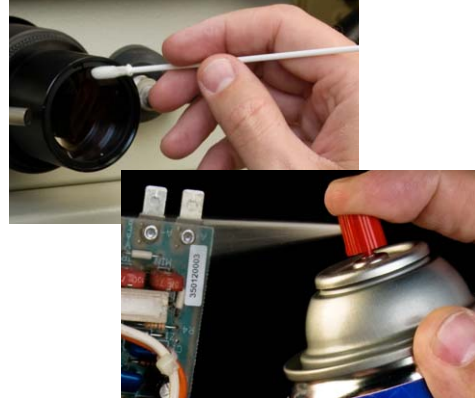


PRECISION V

PLASTIC-SAFE UNIVERSAL CLEANER 1652

Introduction

Product Information



Techspray has engineered solvent cleaners that offer exciting new options for precision cleaning. Precision-V Plastic-Safe formula is engineered for use on sensitive plastic components, packaging and enclosures. Ideal for optics cleaning, critical electronics and other sensitive surfaces. Aerosol qualifies under the aerospace NESHAP VOC guidelines.

Universal formula is an effective defluxer, light degreaser and contact cleaner. Safe on sensitive plastics like ABS, Plexiglas and Lexan.

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.

Removes oils, greases, silicones and other common industrial contaminants. Safe for electronics, and cleans R, RA, RMA and SA type flux residues after high temperature reflow, wave and hand-soldering. Ideal for lead and lead-free processes.

Exposure to Precision-V solvents is less hazardous than many other common solvents: e.g. TCE (Trichloroethylene, CAS #79-01-6), nPB (n-Propyl Bromide, CAS #106-94-5), and Perc (Perchloroethylene, CAS #000127-18-4).

Features / Benefits

- Non-Flammable
- Safe on Sensitive Plastics
- Non-Ozone Depleting
- Residue-Free
- Rapid Evaporation
- Low VOC
- Much Safer Than nPB, TCE and Perc
- Aerospace NESHAP Qualified (aerosol only)

Applications

- Optical cleaning
- Critical electronics and surfaces
- Aerospace & aviation cleaning

Chemical Components

Component	CAS#
1,2-transdichloroethylene	156-60-5
Methyl nonafluorobutyl ether	163702-07-6
Methyl nonafluoroisobutyl ether.....	163702-08-7
n-Heptane.....	142-82-5
Ethanol	64-17-5
Methanol	67-56-1
1,1,1,2-Tetrafluoroethane (aerosol)	811-97-2
Carbon dioxide (aerosol)	124-38-9

Chemical Properties (*MSDS available on request*)

- EXPOSURE LIMIT: 677 ppm (weighted average not including propellant)
- PHYSICAL STATE: Liquid
- ODOR: Faint ethereal odor
- APPEARANCE: Clear, Colorless liquid
- PERCENT VOLATILE: 100
- VAPOR PRESSURE: Aerosol – 44.3 mm Hg
Bulk – 67.8 mm Hg
- VAPOR DENSITY: > 1 (Air=1)
- FLASHPOINT AND METHOD: None to boiling point --- Pensky Marten Closed Cup
- DENSITY: 1.38 at 25°C
- VOC (by wt): Aerosol - 13% (EPA), 75% (CARB)
Bulk - 18% (EPA), 100% (CARB)

Exposure Limit Comparison

CLEANER	Toxicity (wt ave of TLV)
Precision-V Plastic-Safe	677 ppm
AK225 (1663)	270 ppm
AK225 ATE (1658)	243 ppm
AK225 T (1669)	281 ppm
AK225 ATMS (1664)	323 ppm
n-Propyl Bromide (nPB)	10 ppm
Trichloroethylene (TCE)	50 ppm
Perchloroethylene (Perc)	25 ppm
DuPont Vertrel SMT	200 ppm
3M Novec 72DA	200-300 ppm

Compatibility

Plastics

Tested as aerosol on unstressed coupons, and the following immersion times for the base chemistry: 1 minute, 5 minutes, 10 minutes, and 1 hour.

Material	Compatibility	Material	Compatibility
ABS	Excellent	PMMA	Good (1)
Nylon	Excellent	POM	Excellent
Lexan	Excellent	PP	Excellent
HDPE	Excellent	PS	Excellent (2)
LDPE	Excellent	PTFE	Excellent
C. E. Phenolic	Excellent	PVC	Excellent (2)

1 = Softening and fogging noted when immersed 10 minutes or more. Only slight effect noted at 5 minutes. No effect noted at 1 minute. For aerosol test, no effect on unstressed PMMA, but failure on stressed PMMA.

2 = Slight softening when immersed for 1 hour. No effect noted for any other test.

Elastomers

10 minute immersion at room temperature. "Excellent" marked when swelling less than 5% 2 hours after removal from solvent. Data noted when swelling greater than 5% at any time during test.

Material	Compatibility	Material	Compatibility
Silicone	Excellent (3)	Polyurethane	Excellent (1)
Santoprene	Excellent	Nat. gum rubber	Excellent (2)
Hypalon	Excellent	Buna-N	Excellent (1)
Epichlorohydrin	Excellent	Oil Resist Vinyl	Excellent
Viton	Excellent	Buna-S	Excellent
EPDM	Excellent	Sorbothane	Excellent (2)
Neoprene	Excellent	Kelrez 6375	Excellent
Butyl rubber	Excellent	Kelrez 7075	Excellent

1 = Initial swelling between 5 and 10%, swelling reduced to under 5% after 2 hours.

2 = Initial swelling between 10 and 15%, swelling reduced to under 5% after 2 hours.

3 = Initial swelling between 15 and 30%, swelling reduced to under 5% after 2 hours.

Performance

Tested according to MIL-PRF-29608 4.59 standards. Percentage refers to the amount of soil (by weight) removed from stainless steel test coupon, spraying aerosol for 5-seconds.

Standard Mil Spec Soils

R-100 Flux	99.1%
Silicone lubricant	99.8%
Hydraulic fluid.....	99.8%
Corrosion inhibitor	80.1%

Common Aviation Lubricants and Greases

Skydrol LD4	98.2%
Mobil Grease 28.....	74.9%
Dow Corning 111	12.0%
Castrol Aero 40	92.2%
BP Turbo 2197	99.4%
Krytox 240 AC	98.1%

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 Plastic-Safe Cleaners available in the following sizes:

1652-10S	10 oz aerosol
1652-P	1 pint (.47L) in glass bottle
1652-G	1 gal (3.8L) in glass bottle
1652-5G	50 lbs in 5 gal (18.9L) metal drum

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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