

## Precision-V Solvent 3820

### Product #3820

#### Product Description

Ideal replacement for 3M Novec, Chemours Vertrel, and AK225-based solvents.

Precision-V 3820 has azeotropic properties that allow it to safely and efficiently cycle in a vapor degreaser. It is not reactive nor corrosive to metals commonly found in the construction of vapor degreasers.

Exposure to Precision-V solvents is less hazardous than other solvents commonly used in vapor degreasers: e.g. TCE, nPB, and Perc. Precision-V 3820 has a lower boiling point than other vapor-degreaser solvents, reducing heat-stress on components being cleaned and reducing energy consumption from the boil sump and chiller coils.

Precision-V 3820 cleans R, RA, RMA and SA type flux residues after high temperature reflow, wave and hand-soldering, with either lead or lead-free solder. It is also powerful enough for cutting fluids, heavy greases & oils

*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.*

#### Features / Benefits

- Ideal replacement for 3M Novec 72DA, 71DE, 72DA, 72DE & 73DE
- Powerful cleaner – effective on fluxes, cutting fluids, heavy greases & oils
- Nonflammable
- Rapid evaporation
- Zero residue
- Safe on most plastics
- Low VOC
- Non-ozone depleting
- Low Boiling Point – Lower Heat-Stress, Lower Energy

#### Applications

- Used in vapor-degreasers and as cold cleaner
- Removes flux residues electronic or electrical soldering
- Effective on both rosin and no-clean fluxes
- Effective for lead and lead-free soldering processes
- Removes light oils



#### Typical Product Data and Physical Properties

<b>Physical state</b>	Clear, colorless liquid
<b>Odor</b>	Faint ethereal odor
<b>Percent volatile</b>	100
<b>Vapor pressure</b>	132.28 mHg@20°C
<b>Vapor density</b>	>1 [Air=1]
<b>Boiling point</b>	102°F (39°C)
<b>Flashpoint and method</b>	None to boiling point
<b>Solubility in water</b>	Negligible
<b>Density</b>	1.328 g/cc at 25°C
<b>VOC</b>	
EPA	43%
CARB	100%
SCAQMD	1342 (g/l)
<b>RoHS / REACH Compliant</b>	yes
<b>Shelf life</b>	5 years

Precision-V 3820 is the drop-in replacement for Precision-V solvent part #1654 and 1655. The following is comparative data:

Specification	3820	1654	1655
Boiling point	102°F (39°C)	94°F (34°C)	90°F (32°C)
Vapor pressure (mHg@20°C)	132.28	159.10	129.34
Density (g/cc)	1.328	1.34	1.308
GWP (CO <sub>2</sub> = 1)	374	802	777
<b>VOC</b>			
EPA (%)	43	43	43
CARB (%)	100	100	100
SCAQMD (g/l)	1342	1349	1358

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### Material Compatibility - Plastic

ABS:	Not compatible
Nylon:	Excellent
Lexan:	Not compatible
HDPE:	Excellent
LDPE:	Excellent
C.E. Phenolic:	Excellent
PMMA:	Not compatible
POM:	Excellent
PP:	Excellent
PS:	Not compatible
PTFE:	Excellent
PVC:	Not compatible

### Material Compatibility - Elastomers

5 minute immersion at room temperature

Silicone	Slight Swelling <sup>2</sup>
Santoprene	Excellent <sup>1</sup>
Hypalon	Excellent <sup>1</sup>
Epichlorohydrin	Slight Swelling <sup>2</sup>
Viton	Slight Swelling <sup>2</sup>
EPDM	Excellent <sup>1</sup>
Neoprene	Excellent <sup>1</sup>
Butyl rubber	Excellent <sup>1</sup>
Polyurethane	Slight Swelling <sup>3</sup>
Nat. gum rubber	Slight Swelling <sup>2</sup>
Buna-N	Slight Swelling <sup>2</sup>
Oil Resist Vinyl	Excellent <sup>1</sup>
Buna-S	Slight Swelling <sup>2</sup>
Sorbothane	Excellent <sup>1</sup>
Kelrez 6375	Excellent <sup>1</sup>
Kelrez 7075	Excellent <sup>1</sup>

1 = Swelling under 5%

2 = Swelling under 10%, recovery to under 5%

3 = Swelling under 12%, recovery to under 5%

### Metals Compatibility – Metals

Brass foil:	Excellent short-term, slight reaction long-term
Copper foil:	Excellent short-term, slight reaction long-term
Nickel 200	Excellent short-term, slight reaction long-term
Aluminum 6061	Excellent
Aluminum 2024	Excellent short-term, slight reaction long-term
Stainless Steel 316	Excellent
Stainless Steel 304	Excellent
Mild carbon steel	Slight reaction short

### 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.

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### Packaging and Availability

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<b>3820-G</b>	0.9 gallon (3.4L)
<b>3820-5G</b>	4.5 gallons (17.1L)
<b>3820-54G</b>	49.6 gallons (187.8L)

### Environmental Policy

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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.

### Resources

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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](mailto:tsales@techspray.com) or visit our web site at: [www.techspray.com](http://www.techspray.com).

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