



# International Products CORPORATION

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## Plastic Compatibility of P-80® Temporary Assembly Lubricants At Room Temperature

CONCLUSION: P-80® lubricants were found to be compatible with the plastics listed below when immersed for a total of ten days at room temperature.

*Customers are encouraged to conduct their own tests before using P-80® lubricants.*

PLASTIC	PROPERTY	1 Day, %Δ					10 Days, %Δ				
		P-80® EMULSION	P-80® THIX	P-80® GRIP- IT	P-80® REDI- LUBE	Tap Water	P-80® EMULSION	P-80® THIX	P-80® GRIP- IT	P-80® REDI- LUBE	Tap Water
ABS	%Δ Mass	+ 0.2	+ 0.2	+ 0.2	+ 0.3	+ 0.2	+ 0.3	+ 0.4	+ 0.5	+ 0.1	+ 0.4
	%Δ Hardness	- 2.5	- 1.4	- 0.4	- 3.3	- 0.6	- 1.2	- 3.7	+ 0.6	- 1.4	- 1.5
	%Δ Swell	+ 0.4	+ 0.5	+ 0.1	+ 0.1	- 0.1	+ 0.1	+ 0.7	0.0	- 0.2	- 1.1
Polymethyl Methacrylate*	%Δ Mass	+ 0.1	+ 0.2	+ 0.2	+ 0.2	+ 0.1	+ 0.5	+ 0.7	+ 0.7	+ 0.7	+ 0.5
	%Δ Hardness	- 1.1	+ 0.7	- 1.1	- 1.4	- 0.7	- 1.8	0.0	- 0.5	- 0.5	- 2.5
	%Δ Swell	0.0	+ 0.3	0.0	+ 0.1	0.0	+ 0.3	+ 0.1	+ 0.2	+ 0.2	- 0.4
Acetal	%Δ Mass	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.3	+ 0.4	+ 0.3	+ 0.3	+ 0.4
	%Δ Hardness	0.0	0.0	- 1.3	- 0.2	+ 0.6	- 0.9	- 0.4	- 1.1	- 0.2	- 2.1
	%Δ Swell	+ 0.2	0.0	0.0	+ 0.1	0.0	+ 0.5	+ 0.2	+ 0.3	+ 0.1	+ 0.1
HDPE	%Δ Mass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	%Δ Hardness	- 2.8	- 2.3	+ 1.1	- 2.1	+ 3.4	- 5.6	- 4.9	+ 2.7	- 2.3	- 0.8
	%Δ Swell	- 0.1	+ 0.3	- 0.1	- 0.4	+ 0.1	- 0.2	+ 0.1	- 0.2	- 0.6	+ 0.5
PETG	%Δ Mass	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.1	+ 0.2	+ 0.3	+ 0.2	+ 0.2	+ 0.2
	%Δ Hardness	- 1.8	- 0.9	+ 0.4	0.0	- 0.4	- 2.5	- 2.1	- 1.7	- 1.9	- 3.1
	%Δ Swell	- 0.3	+ 0.1	- 0.1	0.0	+ 0.1	+ 0.1	+ 0.1	- 0.2	+ 0.1	+ 0.1
Polycarbonate*	%Δ Mass	+ 0.1	+ 0.1	+ 0.2	+ 0.1	+ 0.1	+ 0.1	+ 0.2	+ 0.1	+ 0.1	+ 0.1
	%Δ Hardness	- 1.2	- 0.4	+ 0.2	- 0.4	- 0.8	- 1.9	- 1.2	- 1.2	+ 0.6	- 0.6
	%Δ Swell	0.0	- 0.1	0.0	0.0	- 0.1	+ 0.2	0.0	0.0	+ 1.0	0.0
Polyetherimide	%Δ Mass	+ 0.2	+ 0.2	+ 0.1	+ 0.2	+ 0.2	+ 0.5	+ 0.7	+ 0.5	+ 0.4	+ 0.5
	%Δ Hardness	- 0.7	- 0.2	+ 0.5	- 0.4	- 0.9	- 1.1	- 0.4	0.0	- 0.2	- 0.9
	%Δ Swell	+ 0.1	+ 0.1	- 0.1	+ 0.3	- 0.1	+ 0.4	+ 0.4	+ 0.1	+ 0.2	- 1.5
Polypropylene	%Δ Mass	0.0	0.0	0.0	0.0	0.0	+ 1.0	0.0	0.0	0.0	0.0
	%Δ Hardness	- 1.9	- 1.5	+ 4.1	0.0	+ 4.1	- 1.7	- 0.4	+ 4.1	- 1.3	+ 2.0
	%Δ Swell	+ 0.5	0.0	0.0	- 0.1	- 0.6	+ 0.1	+ 0.2	0.0	- 0.1	- 0.7
PPO*	%Δ Mass	0.0	0.0	0.0	0.0	0.0	+ 0.1	0.0	+ 0.1	0.0	+ 0.1
	%Δ Hardness	- 0.4	- 0.9	+ 0.2	- 0.6	+ 0.2	- 0.4	- 1.3	+ 0.2	+ 0.6	+ 0.4
	%Δ Swell	0.0	- 0.1	+ 0.1	- 0.2	+ 0.4	0.0	0.0	0.0	- 0.3	0.0
PVC	%Δ Mass	0.0	0.0	0.0	0.0	0.0	+ 0.1	0.0	0.0	+ 0.1	+ 0.1
	%Δ Hardness	- 0.6	- 1.1	+ 1.0	+ 0.2	- 0.8	- 0.6	- 0.8	+ 0.4	+ 0.6	- 0.6
	%Δ Swell	+ 0.4	0.0	0.0	- 0.2	- 0.4	0.3	0.0	0.0	- 0.3	- 0.4
Polytetra- fluoroethylene	%Δ Mass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+ 0.1
	%Δ Hardness	+ 2.0	+ 1.3	- 3.9	- 2.6	+ 7.9	- 0.3	+ 0.3	- 3.6	- 2.0	+ 1.8
	%Δ Swell	- 0.1	0.0	- 0.4	0.0	- 0.5	+ 0.2	+ 0.2	- 0.4	0.0	- 0.4
Polyamide 6	%Δ Mass	+ 0.6	+ 0.7	+ 0.6	+ 1.4	+ 0.6	+ 2.2	+ 2.4	+ 2.3	+ 2.6	+ 2.2
	%Δ Hardness	- 1.6	- 2.2	- 2.7	- 3.4	- 1.7	- 8.6	- 12.8	- 8.6	- 10.7	- 11.5
	%Δ Swell	+ 0.5	+ 0.4	+ 0.6	+ 0.5	+ 0.3	+ 1.4	+ 1.3	+ 1.3	+ 1.3	+ 1.2

### KEY

ABS - Acrylonitrile butadiene styrene

HDPE - High Density Polyethylene

PETG - Polyethylene terephthalate glycol-modified

PPO - Polyphenylene Oxide – Styrene

PVC - Polyvinyl chloride

METHOD – Modified version of ASTM D543-95, Practice A; Room Temp.

Mass: Analytical Balance, 0.0001 grams; CoV – 4.0E-6%

Hardness: Shore D Durometer, 1 – 100 HD; CoV – 0.32%

Swell: Mitutoyo Micrometer, 0.001 mm, CoV – 0.11%

*\*Under strain, these plastics may show crazing.*