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Metals

ImageSolv RI is compatible with virtually all metals unless it has been contaminated with water. It is partially miscible in water, and the contamination of ImageSolv RI with water will result in separation of the product. While ImageSolv RI is non-corrosive to metals, it can be discolored by rust that forms on ferrous metals. For that reason, we recommend storage in lined steel drums or in non-ferrous metal tanks. All stainless steels are recommended.

Glass & Ceramics

ImageSolv RI is not known to permeate or affect any ceramic or glass materials. Glass and glass-lined equipment is recommended.

Plastics

ImageSolv RI is known to degrade certain plastics. Consult the table below that ranks various plastics for compatibility.

Elastomers

ImageSolv RI is not compatible with some elastomers, causing them to swell and change shape. Fluorinated elastomers (Teflon®, etc.) are the most resistant to ImageSolv RI, and are recommended. The following table ranks various elastomers for compatibility.

Plastic Compatibility Table

	Rating	Notes
Teflon® (FEP, PTFE, etc.)	E	
Delrin®	E	
PET	G	
Nylon	G	
ABS	G	
CPVC	G	
Epoxy	G	
Polypropylene	G	
XLPE	G	2
HDPE	G	2
PVC	G	2
Polyurethane	F	
LDPE	F	2
Polystyrene	N	1
Polycarbonate	N	3

Elastomer Compatibility Table

	Rating	Notes
Kel-F®	E	
Kalrez®	E	
Kynar®	E	
Teflon® (FEP, PTFE, etc.)	E	
Nylon	G	
Viton®	G	
Tygon® (Teflon® lined)	G	
Polyurethane	F	
Buna N (Nitrile)	F	5
EPDM	F	
Silicone	F	5
Tygon® (vinyl)	F	2
Natural Rubber	N	4
Latex Rubber	N	4
Neoprene	N	

Rating Key

- E - No damage after 7 days of constant exposure at 25°C.
- G - Little damage or deformation after 7 days of constant exposure at 25°C.
- F - Some effect after 7 days of constant exposure at 25°C. Plastics may experience cracking, crazing, loss of strength or discoloration. Elastomers may experience softening, swelling and loss of strength. Should be tested before use in a specific application.
- N - Not recommended for continuous use. Immediate damage may occur. Severe cracking, crazing, loss of strength, discoloration, dissolution, or permeation loss may occur.

Notes

- 1 Complete dissolution of material into solvent.
- 2 Leaches plasticizer, resulting in brittleness.
- 3 Crazeing and surface cracking.
- 4 Severe swelling and softening.
- 5 Moderate swelling and softening.

Acronyms

ABS	acrylonitrile butadiene styrene.
PET	polyethylene terephthalate
PVC	polyvinyl chloride.
CPVC	chlorinated polyvinyl chloride
PTFE	tetrafluoroethylene (Teflon®).
CTFE	chlorotrifluoroethylene (Kel-F®).
PVF ₂	polyvinylidene fluoride (Kynar®).
HDPE	high density polyethylene.
LDPE	low density polyethylene.
XLPE	cross-linked polyethylene.
EPDM	ethylene propylene.

Trademarks

Teflon® and Viton® are trademarks of Dupont. Tygon® is a trademark of Norton. Kel-F® is a trademark of 3M. Kynar® is a trademark of ELF Atochem.

Recommendations

T2 Labs recommends the following materials for use with ImageSolv RI in various services:

- Drums:** Lined steel drums (epoxy-phenolic or phenolic) are relatively inexpensive and work well. Galvanized drums are acceptable, but more expensive.
- Gaskets and O-rings:** Viton® and other fluoroelastomers are preferred. Soft rubbers like natural rubber and Neoprene will swell excessively and are not recommended.
- Gloves:** Viton® gloves are ideal, but expensive. We find PVC (Pylox or equivalent) and Nitrile (Stansolv or equivalent) gloves to be acceptable, but do not last indefinitely. Change gloves if and when permeation and swelling becomes significant.
- Piping:** Stainless steel (304 or 316) welded piping is recommended. CPVC or polyethylene flexible piping can be used for temporary applications.
- Storage Tanks:** Stainless steel (304 or 316) storage tanks are recommended.
- Transfer Hoses:** XLPE-lined chemical transfer hoses are recommended (Goodyear or equivalent).
- Tubing:** Viton® tubing works well and is flexible, but is quite expensive. Teflon® is ideal, but may be too rigid for some applications. Nylon, XLPE, HDPE and LDPE are all acceptable, but also somewhat rigid. Polyurethane tubing can also be used but the specific types of polyurethane tubing to be used should be tested. Tygon® (vinyl) tubing is an easier material to work with, but may become rigid over time with ImageSolv RI. Tygon® (vinyl) tubing lined with Teflon® works quite well with ImageSolv RI. For large diameter applications, use chemical transfer hoses (see above).

Test Requirements

This data is presented as a guide and is believed to be accurate. However, different conditions and material variability can often lead to different results. Please handle all chemicals responsibly.