

SOLKANE® - INFORMATIONSERVICE

**Compatibility of Elastomers,
plastics and metals with**

SOLVOKANE™

SOLVAY FLUOR GMBH

Technical Service – SOLVENTS –

Product Bulletin-no. I/10.07/19/E

Compatibility of Elastomers and Plastics with Solvokane™

Compatibility of materials with solvents is a major design criterion for any cleaning process. Such compatibility issues are known to be most critical for elastomers and plastics and other materials.

Elastomers are used as seals, flexible joints and o-rings, to name but a few. Plastics are mainly used as construction materials.

The market offers a large variety of different trade-names of elastomer- and plastic materials, which are made of similar raw materials and which are only differentiated by certain additives. These additives may affect the thermal and mechanical stability, the swelling properties, as well as the resistance to ageing of elastomers and plastics.

Due to the large variety of compounds, material compatibility tests with SOLVOKANE™ in combination with different materials were carried out. The short time treatment resistance tests were done in a standard vapor degreasing cleaning equipment (see table I) with a clean, a rinse and a drying step. Total exposure to the solvent was 6 mins. In addition Long time exposure compatibility was tested in static storage tests at defined temperatures for defined periods. The samples were examined regarding changes of volume, mass and appearance.

In EN ISO 175 important notes are given to standardise such kind of investigations. The following tables show the most important results of the material compatibility tests of elastomers, thermoplastics and metals with SOLVOKANE™.

Table I : short term compatibility: Thermoplastics:

Short time treatment–resistance; checked in a vapor degreaser:

tradenames	abbreviation	substance	time	weight	size
	ABS	Acrylnitrilbutadienstyrene	Σ 6 min.	o	o
PA 6 opaque / Fa. Kern	PA 6	Polyamid	Σ 6 min.	+	+
	PC	Polycarbonate	Σ 6 min.	+	+
Simona PE-HWST	PE-HWST	Polyethylene	Σ 6 min.	+	o
Simolux	PETG	Polyethylenterephthalat	Σ 6 min.	+	+
	POM	Polyoxymethylene	Σ 6 min.	+	+
	PP	Polypropylene	Σ 6 min.	+	+
	PTFE	Polytetrafluorethylen	Σ 6 min.	+	+
	PVC	Polyvinylchloride	Σ 6 min.	+	+

ABS: surface was partly dissolved.

PC; PETG: surface getting blur

All tested standard metals (like Al/ Cu/ Fe / steel and also MgAz1 and tinware) were not affected (see also pictures).

Symbols:

- + = compatible (changes < 1%)
- o = borderline (changes < 5%)
- = incompatible (changes > 5%)
- * = no information/investigations necessary

Table II : long term compatibility: ELASTOMERS:

abbreviation	tradenames	substance	weight	size
AP 300/ EPDM 70	EPDM	ethylene propylene diene monomer rubber	+	+
AP 310/EPDM 70	EPDM , Peroxid vernetzt mit FDA	ethylene propylene diene monomer rubber	+	+
AP 540/EPDM 70	EPDM , S-vernetzt	ethylene propylene diene monomer rubber	o	+
CR	Neoprene ®	polymerized Chlorbutadiene	o	o
HNBR 600	HNBR	hydrated NBR (HNBR) Peroxide bonded	o	o
Hy 601/CSM 70	Hyperlon (CSM)	Chlorsulfonated Polyethylene	+	+
NR	(natural) rubber	rubber arabicum	o	-
P 583/ NBR 70	NBR	Acrylnitril-Butadiene-rubber	o	+
Si 820/VMQ 70	Silikonkautschuk	Silikonrubber VMQ	+	+
Vi 563/FPM 70	Viton	Fluorpolymer	o	o
Vi 665/FPM 75	FKM, mit FDA	Fluorpolymer	o	o
Vi 970,G/FPM 70	Fluorkautschuk FKM ; grün	Fluorpolymer FKM ; green	o	o
Vi 981/FEPM 75	Viton Extreme	fluorinated Ethylen-rubber	o	o

Symbols: + = compatible (changes < 5%)
o = borderline (changes 5-20 %)
- = incompatible (changes > 20 %)
Checked : 7 days at roomtemperature

Table III : long time compatibility: Thermoplastics

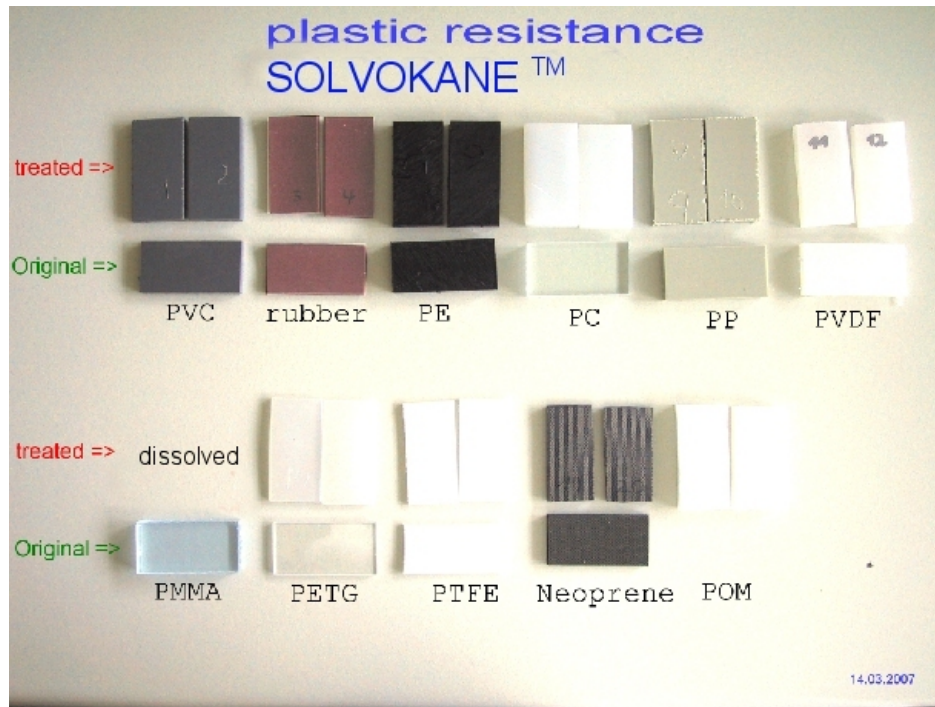
abbreviation	i.e. tradenames	substance	days	weight	size
ABS		Acrylnitrilbutadienstyrene	1	-	-
PA 6	PA 6	Polyamide	6	+	+
PC		Polycarbonate	8	-	o
PE	Hostalen ®; Lupolen ®	Polyethylene	8	o	o
PE-HWST	Hostalen ®	Polyethylene	6	o	o
PE-HWU	Hostalen ®	Polyethylene	6	o	+
PETG		Polyethylenterephthalate	8	-	+
PMMA	Plexiglass	Polymethylmethacrylate	1	Partly dissolved	Partly dissolved
POM	Hostaform ®	Polyoxymethylene	8	o	-
PP		Polypropylene	8	-	o
PP-DWST		Polypropylene	6	-	o
PP-DWU		Polypropylene	6	-	o
PTFE	Teflon ®; Hostaflon ®	Polytetrafluorethylene	8	+	+
PVC		Polyvinylchloride	8	-	+

All tested standard metals (like Al/ Cu/ Fe / steel and also MgAz1 and tinware) were not affected (see also pictures). Examinations made at room temperature.

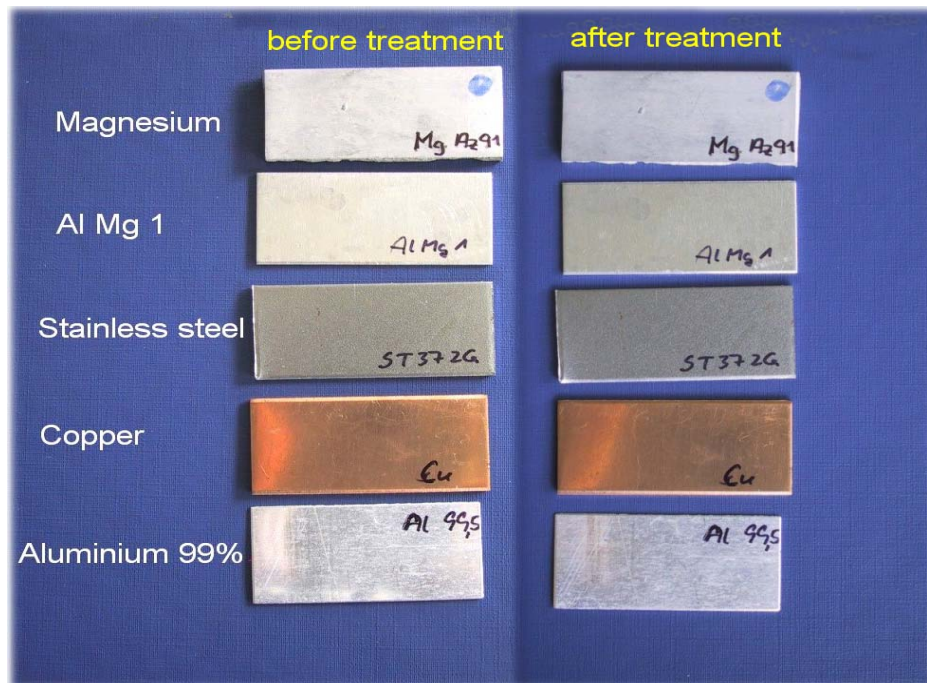
Symbols: + = compatible (changes < 1%)
o = borderline (changes < 5%)
- = incompatible (changes > 5%)
* = no information/investigations necessary

Fotos of the treated materials:

Thermoplastics and Elastomers:



Metals:



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