

# Chemical Resistance List IM 3000

Revision-Nr: 12

Date of issue : 05.01.1998

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Changes are emphasized by italic type.

This issue supersedes the one dated: 26.07.2005

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### Inorganic Compounds

	Judgement
<i>Ammonia solution 25%</i>	2
<i>Ammonia solution 5%</i>	1
<i>Bilge water</i>	1
<i>Bromine</i>	3
<i>Distilled water</i>	1
<i>Hydrogen peroxide 30%</i>	1
<i>Ink</i>	1
<i>Iodine solution</i>	1
<i>Nickel acetate</i>	1
<i>Paper pulp</i>	1
<i>Sea water</i>	1
<i>Soap</i>	1
<i>Sodium bromide</i>	1
<i>Sodium hydroxide solution 33%</i>	2
<i>Sodium hypochlorite</i>	3
<i>Sodium silicate</i>	1
<i>Sodium thiocyanate</i>	1
<i>Water</i>	1

### Acids

	Judgement
<i>Chromosulphuric acid, conc.</i>	3
<i>Formic acid from 10%</i>	3
<i>Formic acid up to 10%</i>	2
<i>Glutamic acid</i>	1
<i>Hydrochloric acid 10%</i>	1
<i>Hydrochloric acid, smoking, 36%</i>	2
<i>Nitric acid above 10%</i>	3
<i>Nitric acid up to 10%</i>	2
<i>Perchloric acid 60%</i>	3
<i>Phosphoric acid above 10%</i>	3
<i>Phosphoric acid up to 10%</i>	2
<i>Propionic acid</i>	1
<i>Saline solution</i>	1
<i>Sulphonitric Acid</i>	3

### Foods

	Judgement
<i>Butter milk</i>	1
<i>Coca cola</i>	1
<i>Fruit juice</i>	1
<i>Grape juice</i>	1
<i>Juice</i>	1
<i>Lemon juice</i>	1
<i>Milk</i>	1
<i>Orange juice</i>	1
<i>Rum</i>	1
<i>Sorbitol</i>	1

### Acids

	Judgement
<i>Acetic acid above 10%</i>	3
<i>Acetic acid anhydrite</i>	3
<i>Acetic acid up to 10%</i>	1
<i>Acrylic acid</i>	2
<i>Boric Acid</i>	1
<i>Butyric acid</i>	1

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## Foods

	Judgement
Tomato juice	1
Tooth paste	1
Vitamins	1
Whey	1
Whisky	1
<i>Wine</i>	1

## Organic Compounds

	Judgement
2-Ethylhexyldiphenylphosphate	1
1,1,1,2 Tetrafluorethane	1
Acetone	1
<i>Adhesive</i>	1
Antifreeze type D	2
Benzaldehyde	1
<i>Benzene</i>	1
Benzoic acid	1
Brake fluid ATE SL DOT4	2
Butanol	1
Chlorinated hydrocarbons	1
Color paint	1
Coolant 25 R	1
Cyclohexane	1
Di-2-ethylhexylphenylphosphate	1
Diallylphthalic	1
Dimethyl formamide	3
Dioxane	2
<i>Disinfectant</i>	1
Ethanol	2
Ethyl acetate	1
Fat alcohols	1
Formaldehyde	1
<i>Gas condensate</i>	1
Glue	1
Glycerine	1
Heptane	1
Hexane	1
Isooctane	1
Isopropanol	1
Latex	1

## Organic Compounds

	Judgement
Melamin resin	1
Methane	1
Methylene chloride	2
<i>Methylisobutylketon</i>	1
Panoline	1
PCB-substitutes	1
Penta-erythritol-ester	1
<i>Perfume</i>	1
Phenol	1
Phosphate esters	1
Polyester resins	1
Propanol	2
Propylene glycols	2
Screw saving glue	1
Styrene	1
<i>Tar</i>	1
tert.-Butyl-2-hexanoat	1
tert.-Butylmethylether	1
Tetrachlorethylene	1
<i>Tetrahydrofurane</i>	3
<i>Toluene</i>	1
Tributylphosphate 79%, 2,9% Cycloaliphatic Epoxydes, 21% Additives	1
Trichlorethylene	1
Trichloroethane	1
Triethyleneglycol	2
Triphenylphosphate	1
Xylene	1

## Gasoline / Oil / Wax

	Judgement
ATF Dexron III	1
Biologic fuel	1
<i>Carnauba wax</i>	1
Chevron Hyjet IV-A	1
Diesel	1
<i>Edible Oil</i>	1
<i>Essential oils</i>	1
Fuel oil	1
Gear oil	1

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## Gasoline / Oil / Wax

	Judgement
Hydraulic oil	1
<i>Kern oil</i>	1
<i>Milk fats</i>	1
Mineral oil	1
Normal benzene unleaded	1
EN228	1
Oil	1
<i>Oil of bitter almond</i>	1
<i>Palm Oil</i>	1
Paraffin oil	1
Rapeoilmethylester	1
Skydrol MCS-2361	1
Skyrol B500-4	1
<i>Spirits of turpentine</i>	1
Super benzene leaded DIN	1
51600	1
Super benzene unleaded EN228	1
Wax	1

## Refrigerants

	Judgement
R11 Trichlorofluoromethane	1
R12 Dichlorodifluoromethane	1
R12B1 Bromchlorodifluoromethane	1
R13 Trifluorchloromethane	1
R13B1 Bromtrifluoromethane	1
R14 Tetrafluoromethane	1
R21 Dichloromonofluoromethane	1
R22 Chlorodifluoromethane	1
R23 Trifluoromethane	1
R32 Difluoromethane	1
R40 Chloromethane	1
R40B1 Bromomethane	1
R41 Methylfluoride	2
R114 1,2-Dichloro-1,1,2,2-tetrafluoroethane	1
R115 Chloropentafluoroethane	1
R116 Hexafluoroethane	1
R123 C <sub>2</sub> HCl <sub>2</sub> F <sub>3</sub>	1

## Refrigerants

	Judgement
R124 1-Chloro-1,2,2,2-tetrafluoroethane	1
R125 Pentafluoroethane	1
R133A 1-Chloro-2,2,2-trifluoroethane	1
R134A Tetrafluoroethane	1
R142B 1-Chloro-1,1-difluoroethane	1
R143A 1,1,1-Trifluoroethane	1
R152A 1,1-Difluoroethane	1
R161 Ethylfluoride	1
R170 C <sub>2</sub> H <sub>6</sub>	1
R218 Octafluoropropane	1
R227 Heptafluoropropane	1
R290 Propane	1
RC318 Octafluorocyclobutane	1
R401A CHClF <sub>3</sub> 53%	1
C <sub>2</sub> H <sub>4</sub> F <sub>4</sub> 13%	
R402A CHClF <sub>2</sub> (R22) 38%	1
C <sub>2</sub> HF <sub>5</sub> (R125) 60%	
C <sub>3</sub> H <sub>8</sub> (R290) 2%	
R403B Mixture	1
R404A C <sub>2</sub> HF <sub>5</sub> 44%	
F <sub>2</sub> CH-CF <sub>3</sub> 4%	1
H <sub>3</sub> C-CF <sub>3</sub> 52%	
R407C CH <sub>2</sub> F <sub>2</sub> (R32) 23%	1
F <sub>2</sub> HC-CF <sub>3</sub> (R125) 25%	
FH <sub>2</sub> C-CF <sub>3</sub> 53%	
R408A CH <sub>2</sub> F <sub>2</sub> 45-49%	1
C <sub>2</sub> HF <sub>5</sub> 5-9%	
H <sub>3</sub> C-CF <sub>3</sub> 45-47%	
R409A CH <sub>2</sub> F <sub>2</sub> 58-62%	1
CHClF-CF <sub>3</sub> 23-27%	
H <sub>3</sub> C-CClF <sub>2</sub> 14-16%	
R410A Mixture	1
R413A Mixture	1
R500 Dichlorodifluoromethane and 1,1- Difluoroethane, azeotropes Mixture with ≈ 74 % Dichlorodifluoromethane	1

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	Judgement
R502 Chlorodifluoromethane and Chloropentafluoroethane, Mixture with a constant evaporation point, with $\approx$ 49 % Chlorodifluoromethane	1
R503 Chlorotrifluoromethane and Trifluoromethane, azeotropic Mixture, with $\approx$ 60 % Chlorotrifluoromethane	1
R507 C <sub>2</sub> HF <sub>5</sub> 50% CH <sub>3</sub> -CF <sub>3</sub> 50%	1
R600 n-Butane	1
R600A Iso-Butane	1
R717 Ammonia	1
R1132A 1,1-Difluoroethylene	1
R1150 C <sub>2</sub> H <sub>4</sub>	1
R1216 Hexafluoropropylene	1
R1270 C <sub>3</sub> H <sub>6</sub>	1
R1318 Octafluorobut-2-ene	1
HFC245 1,1,1,3,3 Pentafluoropropan	1

## Resistance to gas

	Judgement
Hydrogen	1
Hydrogen bromide	2
Hydrogen chloride	3
<i>Hydrogen sulfide</i>	1
Methane	1
Natural gas	1
Nitrogen	1
Ozone (150g/m <sup>3</sup> )	1
Propane	1
Propylene	1
Sulphur dioxide	1
Water steam	1

## Resistance to gas

	Judgement
Acetylene	1
Air	1
Argon	1
Butane	1
Carbon dioxide	1
<i>Carbon monoxide</i>	1
Chlorine	3
Ethane	1
Ethylene	1
Helium	1

## Judgement criteria

1	very good resistance
2	good to satisfying resistance
3	bad resistance