# Chemical Resistance Chart for SITRANS F M

NOTE ! The table is valid for pure solutions at 20°C where nothing else is stated.

High resistance + | Moderate resistance 0 | No resistance -

| Chemicals A - I | | Plastics and rubbers | | | | | | | | | Ceramics | | Metals | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PTFE | PFA | EPDM | NBR | Neoprene | Ebonite | Linatex | FKM/FPM | PVDF | Zirconium oxide ($ZrO_2$) | Aluminium oxide ($AL_2O_3$)* | AISI 316 | Titanium | Tantalum | Hastelloy C4 | Hastelloy C22 | Hastelloy C276 | Platinum* | Monel | Graphite |
| Acetic acid 30% | $CH_3COOH$ | + | + | + | o | + | + | o | - | + | + | + | + | + | + | + | + | + | + | o | - |
| Acetic acid Glacial | $CH_3COOH$ 100% | + | + | + | - | - | + | o | - | + | + | + | + | + | + | + | + | + | + | o | |
| Aluminium chloride | $AlCl_3$ | + | + | + | + | + | + | + | + | + | + | + | - | + | + | + | + | + | + | + | - |
| Aluminium nitrate | $Al(NO_3)_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Aluminium sulphate | $Al_2(SO_4)_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Ammonium bromide | $NH_4Br$ | + | + | | | | + | | | | + | + | + | + | + | + | + | + | + | + | - |
| Ammonium chloride | $NH_4Cl$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Ammonium fluoride | $NH_4F$ | + | + | + | + | o | + | + | + | + | o | o | o | - | - | + | + | + | + | + | - |
| Ammonium hydroxide | $NH_4OH$ | + | | + | - | + | + | o | o | + | + | + | + | + | o | + | + | + | + | - | |
| Ammonium nitrate | $NH_4NO_3$ | + | + | + | + | o | + | + | + | + | + | + | + | o | + | + | + | + | + | - | - |
| Ammonium sulphate | $(NH_4)_2SO_4$ | + | + | + | + | o | + | + | o | + | + | + | + | + | + | + | + | + | + | + | - |
| Aniline | $C_6H_5NH_2$ | + | + | + | - | - | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Aqua Regia | HCl / $HNO_3$ (3:1) | + | + | - | - | - | o | - | - | + | + | + | - | o | + | - | - | - | - | - | - |
| Arsenic acid | $AsH_3O_4$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | |
| Barium chloride | $BaCl_2$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Barium hydroxide | $Ba(OH)_2$ | + | + | + | + | + | + | + | + | + | + | + | + | + | o | + | + | + | + | + | |
| Beer | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Benzoic acid | $C_6H_5COOH$ | + | + | - | - | - | - | - | + | + | + | + | + | + | + | + | + | + | + | o | + |
| Boric acid | $B(OH)_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | o |
| Bromine | $Br_2$ | + | + | - | - | - | o | - | + | + | + | + | - | o | + | o | o | o | + | o | - |
| Butyl alcohol | $C_4H_9OH$ | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Butyric acid | $CH_3CH_2CH_2COOH$ | + | + | o | - | - | o | | o | + | + | + | + | + | + | + | + | + | + | + | o |
| Calcium chloride | $CaCl_2$ | + | + | + | + | + | + | + | + | + | + | + | o | + | + | + | + | + | + | + | - |
| Calcium fluoride | $CaF_2$ | + | + | + | + | + | + | + | + | + | o | o | + | - | - | + | + | + | + | + | - |
| Calcium hydroxide | $Ca(OH)_2$ | + | + | + | + | + | + | + | + | + | + | + | + | + | o | + | + | + | + | + | |
| Calcium hypochlorite | $Ca(ClO)_2$ | + | + | + | o | o | o | o | + | + | + | + | - | + | + | + | + | + | + | o | - |
| Calcium nitrate | $Ca(NO_3)_2$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Calcium phosphate | $Ca_3(PO_4)_2$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Calcium sulphate (gypsum) | $CaSO_4$ | + | + | + | | + | + | | | + | + | + | + | + | + | + | + | + | + | + | - |
| Camphoric acid | $C_{10}H_{16}O_4$ | + | + | | | | o | | | + | + | + | + | + | + | + | + | + | + | + | |
| Carbonic acid | $H_2CO_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | o |
| Chlorine | $Cl_2$ | + | + | o | - | - | o | - | + | + | + | + | - | o | + | + | + | + | + | o | - |
| Chlorine dioxide | $ClO_2$ | + | + | - | - | - | o | - | + | + | + | + | - | + | + | + | + | + | + | - | |
| Chromic acid | $CrO_3$ | + | + | o | - | - | + | - | + | + | + | + | o | + | + | o | o | o | + | o | - |
| Citric acid | $C_3H_4(OH)(COOH)_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Copper (II) chloride | $CuCl_2$ | + | + | + | + | o | + | + | + | + | + | + | o | + | + | o | o | o | + | o | - |
| Copper sulphate | $CuSO_4$ | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + | o | - |
| Diesel oil | | + | + | - | + | - | o | - | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Ethanol / Ethyl alcohol | $CH_3CH_2OH$ | + | + | + | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + |
| Ferric chloride | $FeCl_3$ | + | + | + | + | o | + | + | + | + | + | + | - | + | + | o | o | o | + | - | - |
| Ferric nitrate | $Fe(NO_3)_3$ | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + | - | - |
| Formaldehyde | HCHO | + | + | o | o | o | + | o | - | + | + | + | + | + | + | + | + | + | + | + | + |
| Formic acid | HCOOH | + | + | + | - | o | + | o | - | + | + | + | + | o | + | + | + | + | + | + | - |
| Fruit juice | | + | + | + | o | o | o | - | + | + | + | + | + | + | + | + | + | + | + | + 1) | |
| Hydrobromic acid | HBr | + | + | + | - | o | + | + | + | + | + | + | - | + | + | o | o | o | + | o | - |
| Hydrochloric acid | HCl | + | + | + | o | o | o | o | + | + | + | + | o | - | + | o | o | o | + | o 1) | - |
| 0.1% Hydrochloric acid | 0,1% HCl | + | + | + | + | o | + | + | + | + | + | + | o | + 2) | + | + 2) | + 2) | + 2) | + | o 1) | - |
| 1% Hydrochloric acid | 1% HCl | + | + | + | + | o | + | + | + | + | + | + | - | +11) | + | + 2) | + 2) | + 2) | + | o 1) | - |
| 10% Hydrochloric acid | 10% HCl | + | + | + | | | + | | + | + | + | + | - | - | + | + 4) | + 5) | + 5) | + | o 1) | - |
| 20% Hydrochloric acid | 20% HCl | + | + | + | | + | + | + | + | + | + | + | - | - | + | - | - | - | + | o 1) | - |
| 37% Hydrochloric acid (concentrated) | 37% HCl | + | + | + | - | - | o | o | + | + | + | + | - | - | + | + 6) | + 7) | + 7) | + | o 1) | - |
| Hydrocyanic acid | HCN | + | + | + | o | o | + | o | + | + | + | + | + | - | + | + | + | + | + | + | + |
| Hydrofluoric acid | HF | + | + | o | - | o | - | - | o | + | - | o | - | - | - | o | o | o | + | + | - |
| Hydrogen peroxide | $H_2O_2$ | + | + | - | - | - | o | - | + | + | ? | + | + | o | + | o | o | o | o | - | - |
| Hydroiodine acid | HI | + | + | | | - | o | | | + | + | + | o | + | + | + | + | + | - | o | |
| Iodine | $I_2$ | + | + | o | o | - | o | - | + | + | + | + | o | o | + | o | o | o | + | o | |

* For chemical resistance for MAG 1100/MAG 1100 F (DN10-100) platinium with gold/titanium brazing alloy electrode please also refer to titanium.

1) no air 2) max boiling point 3) no stagnation 4) max 40 °C 5) max 45 °C 6) max 50 °C 7) max 55 °C 8) max 60 °C 9) max 65 °C 10) max 75 °C 11) max 80 °C 12) max 85 °C 13) max 95 °C 14) max 110 °C

# Chemical Resistance Chart for SITRANS F M

NOTE ! The table is valid for pure solutions at 20°C where nothing else is stated.

High resistance + | Moderate resistance 0 | No resistance -

| Chemicals K - Z | | Plastics and rubbers | | | | | | | | | Ceramics | | Metals | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | PTFE | PFA | EPDM | NBR | Neoprene | Ebonite | Linatex | FKM/FPM | PVDF | Zirconium oxide ($ZrO_2$) | Aluminium oxide ($AL_2O_3$)* | AISI 316 | Titanium | Tantalum | Hastelloy C4 | Hastelloy C22 | Hastelloy C276 | Platinum* | Monel | Graphite |
| Kerosene | | + | + | - | + | - | o | - | + | + | + | + | + | + | + | + | + | + | + | + | |
| Lactic acid | $CH_3CH(OH)COOH$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | |
| Magnesium chloride | $MgCl_2$ | + | + | + | + | + | + | + | + | + | + | + | o | + | + | + | + | + | + | + | - |
| Magnesium hydroxide | $Mg(OH)_2$ | + | + | + | + | + | + | o | + | + | + | + | + | + | o | + | + | + | + | + | |
| Magnesium nitrate | $Mg(NO_3)_2$ | + | + | + | + | + | + | + | | + | + | + | + | + | + | + | + | + | + | + | - |
| Magnesium sulphate | $MgSO_4$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Manganese chloride | $MnCl_2$ | + | + | | | | + | | | + | + | + | o | + | + | + | + | + | o | o | |
| Methanol / Methyl alcohol | $CH_3OH$ | + | + | + | + | + | + | + | - | + | + | + | + | o | + | + | + | + | + | + | + |
| Methylene chloride | $CH_2Cl_2$ | + | + | o | - | - | o | - | + | + | + | + | o | + | + | + | + | + | + | + | + |
| Milk | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | |
| Nitric acid | $HNO_3$ | + | + | o | o | o | o | - | o | + | + | + | + | + | + | + | + | + | + | - | - |
| 1% Nitric acid | 1% $HNO_3$ | + | + | + | - | + | + | - | o | + | + | + | + 2) | + 2) | + | + 2) | + 2) | + 2) | + | - | - |
| 10% Nitric acid | 10% $HNO_3$ | + | + | + | o | o | + | - | o | + | + | + | + 2) | + 2) | + | + 2) | + 2) | + 2) | + | - | - |
| 50% Nitric acid | 50% $HNO_3$ | + | + | - | - | - | o | - | o | + | + | + | + 2) | + 12) | + | + 2) | + 2) | + 2) | + | - | - |
| 70% Nitric acid | 70% $HNO_3$ | + | + | o | - | - | - | - | - | + | + | + | + 11) | + 2) | + | + 8) | + 12) | + 5) | + | - | - |
| Nitric acid + Hydrofluoric acid | $HNO_3$ / HF (1:1) | + | + | | | | - | | | + | - | o | - | - | - | o | o | o | o | - | |
| Oxalic acid | $(COOH)_2$ | + | + | + | o | o | + | o | + | + | + | + | + | - | + | + | + | + | + | + | - |
| Petrol / Gasoline | | + | + | - | + | o | o | - | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Phosphoric acid | $H_3PO_4$ | + | + | o | o | o | o | o | + | + | o | o | + | o | + | + | + | + | + | + 1) | - |
| 1% Phosphoric acid | 1% $H_3PO_4$ | + | + | + | o | o | + | o | + | + | + | + | + 2) | + 2) | + | + 2) | + 2) | + 2) | + | + 1) | - |
| 10% Phosphoric acid | 10% $H_3PO_4$ | + | + | + | o | o | + | o | + | + | + | + | + 2) | + 7) | + | + 2) | + 2) | + 2) | + | + 1) | - |
| 50% Phosphoric acid | 50% $H_3PO_4$ | + | + | | | | o | | | | + | + | + 13) | - | + | + 2) | + 2) | + 2) | + | + 1) | - |
| 80% Phosphoric acid | 80% $H_3PO_4$ | + | + | o | - | - | o | - | + | + | o | o | + 11) | - | + | + 14) | + 14) | + 14) | + | + 1) | - |
| Phosphoric acid + Hydrofluoric acid + Nitric acid | $H_3PO_4$ / HF / $HNO_3$ (1:1:1) | + | + | | | | - | | | + | - | - | - | - | - | o | o | o | o | - | |
| Phosphoric acid + Sulphuric acid + Nitric acid | $H_3PO_4$ / $H_2SO_4$ / $HNO_3$ (1:1:1) | + | + | | | | - | | | + | o | o | - | - | + | + | + | + | + | - | |
| Phosphoric acid + Sulphuric acid | $H_3PO_4$ / $H_2SO_4$ (1:1) | + | + | | | | - | | | + | o | o | - | - | + | + | + | + | + | o 1) | |
| Phosphoric acid + Hydrofluoric acid | $H_3PO_4$ / HF (1:1) | + | + | | | | - | | | + | - | - | - | - | - | o | o | o | + | o 1) | |
| Potassium chloride | KCl | + | + | + | + | + | + | + | + | + | + | + | o | o | + | + | + | + | + | + | |
| Potassium cyanide | KCN | + | + | + | + | o | + | + | + | + | + | + | + | + | + | o | o | o | o | + | |
| Potassium hydroxide | KOH | + | + | + | o | o | + | o | - | + | + | + | o | + | o | + | + | + | + | + | - |
| Potassium nitrate | $KNO_3$ | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | o | - |
| Potassium sulphate | $K_2SO_4$ | + | + | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Sea water/ Salt water | | + | + | + | + | o | + | + | + | + | + | + | o | + | + | + | + | + | + | + 3) | |
| Sodium chloride | NaCl | + | + | + | + | + | + | + | + | + | + | + | o | + | + | + | + | + | + | + | - |
| Sodium hydroxide | NaOH | + | + | + | o | + | + | + | - | + | + | + | + | + | o | + | + | + | + | + | |
| Sodium hypochlorite | NaOCl | + | + | o | - | o | o | - | + | + | + | + | - | + | + | + | + | + | + | o | - |
| Sodium nitrate | $NaNO_3$ | + | + | + | o | o | + | o | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Sodium sulphate | $Na_2SO_4$ | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + | + | - |
| Sugar water | | + | + | + | + | o | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| Sulphuric acid | $H_2SO_4$ | + | + | o | - | - | o | o | o | + | o | o | o | o | + | + | + | + | + | o 1) | - |
| 1% Sulphuric acid | 1% $H_2SO_4$ | + | + | o | - | - | + | o | + | + | + | + | + 13) | + 9) | + | + 10) | + 13) | + 10) | + | o 1) | - |
| 10% Sulphuric acid | 10% $H_2SO_4$ | + | + | o | - | - | + | o | + | + | + | + | + 6) | - | + | + 10) | + 13) | + 10) | + | o 1) | - |
| 20% Sulphuric acid (oleum) | 20% $H_2SO_4$ | + | + | - | - | - | o | - | + | + | + | + | o | - | + | + | + | + | + | o | - |
| 50% Sulphuric acid | 50% $H_2SO_4$ | + | + | - | - | - | o | - | o | + | o | o | - | - | + | + 4) | + 8) | + 5) | + | o 1) | - |
| 100% Sulphuric acid | 100% $H_2SO_4$ | + | + | - | - | - | - | - | o | + | o | o | + 6) | - | + | + 4) | + 7) | + 6) | + | - | - |
| Sulphuric acid + Nitric acid | $H_2SO_4$ / $HNO_3$ (1:1) | + | + | | | | o | | | + | o | o | - | - | + | + | + | + | + | - | |
| Tin chloride | $SnCl_2$ | + | + | + | + | + | + | + | + | + | + | + | - | + | + | o | o | o | + | o | - |
| Toluene | $C_6H_5CH_3$ | + | + | - | - | - | o | - | + | + | + | + | + | + | + | + | + | + | + | + | |
| Water, dionized | | + | + | + | o | o | + | | + | + | + | + | o | o | + | o | + | + | + | o | |
| Water, potable | | + | + | + | + | o | + | o | o | + | + | + | o | + | + | + | + | + | + | + | - |
| Wine | | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + 1) | |
| Zinc chloride | $ZnCl_2$ | + | + | + | + | + | + | + | + | + | + | + | o | o | + | o | o | o | + | + | - |

* For chemical resistance for MAG 1100/MAG 1100 F (DN10-100) platinium with gold/titanium brazing alloy electrode please also refer to titanium.

1) no air 2) max boiling point 3) no stagnation 4) max 40 °C 5) max 45 °C 6) max 50 °C 7) max 55 °C 8) max 60 °C 9) max 65 °C 10) max 75 °C 11) max 80 °C 12) max 85 °C 13) max 95 °C 14) max 110 °C