

2.3 Chemical resistance

Table 2.3 indicates the chemical resistance of PE to various media at a number of temperatures.

In transporting chemicals, consideration needs to be given to the following factors:

- the medium
- concentration of the medium
- temperature
- duration of the load
- flow volume

The elastomer resistance list is intended as an aid for determining the suitability of a given seal. The indicated values refer to the volume of swelling for the rubber compound, which is only one of the indications concerning resistance. Chemical damage to the polymer chain can also lead to changes in mechanical properties such as tensile strength, elasticity at break, etc. The most commonly indicated values are measured at a temperature of 20°C. A longer exposure to a higher temperature can create more aggressive conditions that reduce the life-span of elastomers.

Explanation of symbols used for PE pipes and fittings:

| | |
|---|--|
| + | Resistant: based on performed tests, PE is in general a suitable material for this application |
| / | Limited resistance: further research required |
| - | Non-resistant |

Empty field = The material has not been tested on this medium at this temperature.

- 1 Little or no effect: volume change <10%, the elastomer can display slight swelling and/or loss of physical characteristics under heavy conditions.
- 2 Possible change of physical qualities: volume change of 10-20%, the elastomer can display swelling and a change of physical characteristics, can be suitable for structural applications.
- 3 Substantial change in physical characteristics: the elastomer displays a substantial change in volume and physical qualities.
- 4 Excessive change: elastomer is unsuitable.

Empty field = The elastomer has not been tested on this medium.

Abbreviations used:

| | |
|------|---------------------------|
| PE | = polyethylene |
| NBR | = acrylonitrile butadiene |
| EPDM | = ethylene propylene |
| FPM | = fluorocarbon |
| SBR | = styrol butadiene |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|-----------------------------|--|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Acetaldehyde | CH ₃ CHO | Aqueous solution | 40% | + | + | / | 4 | 2 | 4 | 3 |
| Acetaldehyde | CH ₃ CHO | Technically pure | 100% | + | / | / | 4 | 2 | 4 | 3 |
| Acetic Acid | CH ₃ COOH | Aqueous solution | 10% | + | + | + | 4 | 3/4 | 4 | 4 |
| Acetic Acid | CH ₃ COOH | Aqueous solution | 30% | + | + | + | 4 | 4 | 4 | 4 |
| Acetic Acid | CH ₃ COOH | Aqueous solution | 60% | + | + | + | 4 | 4 | 4 | 4 |
| Acetic Acid | CH ₃ COOH | Aqueous solution | 80% | / | / | - | 4 | 4 | 4 | 4 |
| Acetic Acid | CH ₃ COOH | Technically pure | 100% | + | + | / | 4 | 4 | 4 | 4 |
| Acetic Acid Anhydride | (CH ₃ CO) ₂ O | Technically pure | 100% | + | / | | 4 | 2 | 4 | 2 |
| Acetone | CH ₃ COCH ₃ | Aqueous solution | 10% | + | + | + | 4 | 1 | 4 | 2/3 |
| Acetone | CH ₃ COCH ₃ | Technically pure | 100% | / | / | | 4 | 1 | 4 | 2/4 |
| Acetophenone | CH ₃ COC ₆ H ₅ | Technically pure | Indetermined | + | + | + | 4 | 1 | 4 | 4 |
| Acrylonitrile | CH ₂ =CH-CN | Technically pure | 100% | + | + | + | 4 | 4 | 4 | 3 |
| Adipic Acid | HOOC(CH ₂) ₄ COOH | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Alcohol | | | 40% | + | | | | | | |
| Alcoholic Spirits | | | Comm. Comp. | + | + | | | | | |
| Allyl Alcohol | CH ₂ =CH-CH ₂ OH | Aqueous solution | 96% | + | + | + | | | | |
| Alum | Al ₂ (SO ₄) ₃ K ₂ SO ₄ 4H ₂ O | Aqueous solution | Solution | + | + | + | 2 | 1 | 1 | 1 |
| Alum | Al ₂ (SO ₄) ₃ K ₂ SO ₄ 4H ₂ O | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Aluminium Acetate | (CH ₃ COO) ₃ Al | Aqueous solution | Saturated | + | + | + | 2 | 1 | 4 | 4 |
| Aluminium Bromide | AlBr ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Aluminium Chloride | AlCl ₃ | Aqueous solution | All | + | + | + | 2 | 1 | 1 | 1 |
| Aluminium Fluoride | AlF ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Aluminium Nitrate | Al(NO ₃) ₃ | Aqueous solution | Saturated | + | | | 1 | 1 | 1 | 1 |
| Aluminium Sulfate | Al ₂ (SO ₄) ₃ | Aqueous solution | 10% | + | + | + | 2 | 1 | 1 | 1 |
| Aluminium Sulfate | Al ₂ (SO ₄) ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Ammonia | NH ₃ | Aqueous solution | Solution | + | + | + | 2 | 1 | 3 | 2 |
| Ammonia Gas | NH ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 3 | 2 |
| Ammonia Gas | NH ₃ | Technically pure | 100% | + | + | + | 2 | 1 | 3 | 2 |
| Ammonium Acetate | CH ₃ COONH ₄ | Aqueous solution | Saturated | + | + | + | | | | |
| Ammonium Bifluoride | NH ₄ FHF | Aqueous solution | Saturated | + | + | + | | | | |
| Ammonium Carbonate | (NH ₄) ₂ CO ₃ | Aqueous solution | 100% | + | + | + | 2 | 1 | 2 | 2 |
| Ammonium Chloride | NH ₄ Cl | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Ammonium Fluoride | NH ₄ F | Aqueous solution | 25% | + | + | + | 1 | 1 | 1 | 1 |
| Ammonium Fosfate | (NH ₄) ₃ PO ₄ X H ₂ O | | All | + | + | + | 1 | 1 | 1 | 1 |
| Ammonium Hydroxide | NH ₄ OH | Aqueous solution | Solution | + | + | + | 4 | 1 | 2 | 4 |
| Ammonium Hydroxide | NH ₄ OH | Aqueous solution | Saturated | + | + | + | 4 | 1 | 2 | 4 |
| Ammonium Nitrate | NH ₄ NO ₃ | Aqueous solution | Saturated | + | + | / | 2 | 1 | 1 | 1 |
| Ammonium Sulfate | (NH ₄) ₂ SO ₄ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Ammonium Sulphhydrate | NH ₄ OH(NH ₄) ₂ SO ₄ | Aqueous solution | Solution | + | | | | | | |
| Ammonium Sulphhydrate | NH ₄ OH(NH ₄) ₂ SO ₃ | Aqueous solution | Saturated | + | | | | | | |
| Ammonium Sulfide | (NH ₄) ₂ S | Aqueous solution | 10% | + | + | + | 1 | 1 | 1 | 1 |
| Ammonium Sulfide | (NH ₄) ₂ S | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Amyl Acetate | CH ₃ COO(CH ₂) ₄ CH ₃ | Technically pure | 100% | + | + | + | 4 | 2 | 4 | 3 |
| Amyl Alcohol | CH ₃ (CH ₂) ₃ CH ₂ OH | | 100% | + | + | / | 2 | 2 | 2 | 1 |
| Amyl Chloride | CH ₃ (CH ₂) ₄ Cl | Technically pure | 100% | - | | | | 4 | 1 | 4 |
| Aniline | C ₆ H ₅ NH ₂ | Technically pure | 100% | / | | | 4 | 2/3 | 1 | 3 |
| Aniline Chlorhydrate | C ₆ H ₅ NH ₂ HCl | Aqueous solution | Saturated | / | / | / | 2 | 2 | 1 | 1 |
| Anthraquinone Sulfonic Acid | | | Solution | + | | | | | | |
| Antimony Trichloride | SbCl ₃ | Aqueous solution | 90% | + | + | + | 1 | 1 | 1 | 1 |
| Aqua Regia | 3HCl+1HNO ₃ | | 100% | - | - | - | 4 | 4 | 2/3 | 4 |
| Arsenic Acid | H ₃ AsO ₄ | | Saturated | + | + | | | | | |
| Barium Carbonate | BaCO ₃ | Aqueous solution | All | + | + | + | | | | |
| Barium Chloride | BaCl ₂ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Barium Hydroxide | Ba(OH) ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Barium Nitrate | Ba(NO ₃) ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Barium Sulfate | BaSO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Barium Sulfide | BaS | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 2 |
| Beer | | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Benzaldehyde | C ₆ H ₅ CHO | Aqueous solution | Saturated | + | + | + | 4 | 2 | 4 | 3 |
| Benzene | C ₆ H ₆ | Technically pure | 100% | / | - | - | 4 | 4 | 3 | 4 |
| Benzene + Benzine | | | 20/80% | / | - | - | 2/3 | 4 | 2 | 4 |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|--|--|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Benzene Sulfonic Acid | C ₆ H ₅ SO ₃ H | Aqueous solution | 10% | - | | | 4 | 4 | 1 | 4 |
| Benzine (Free Of Pb And Aromatic) | C ₅ H ₁₂ +C ₁₂ H ₂₆ | Technically pure | 100% | + | + | / | 4 | 4 | 1 | 4 |
| Benzoic Acid | C ₆ H ₅ COOH | Aqueous solution | Saturated | + | + | + | 4 | 4 | 1 | 4 |
| Benzyl Alcohol | C ₆ H ₅ CH ₂ OH | Technically pure | 100% | + | + | / | 4 | 1 | 1 | 4 |
| Bleaching Lye | NaClO+NaCl | | 12,5% Cl | / | / | | 4 | 1 | 1 | 4 |
| Borax | Na ₂ B ₄ O ₇ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Boric Acid | H ₃ BO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Brine | | | Comm. Comp. | + | | | | | | |
| Bromic Acid | HBrO ₃ | | 10% | + | + | + | 4 | 1 | 1 | 4 |
| Bromine,Liquid | Br ₂ | Technically pure | 100% | - | | | 4 | 3 | 2 | 4 |
| Bromine,Liquid | Br ₂ | | High | - | | | 4 | 4 | 1 | 4 |
| Butadiene | CH ₂ =CH-CH=CH ₂ | Gas | 100% | + | | | 3 | 4 | 2 | 4 |
| Butane Gas | CH ₃ CH ₂ CH ₂ CH ₃ | | 100% | + | + | + | 2 | 4 | 2 | 4 |
| Butanediol | OHCH ₂ CH ₂ CH ₂ CH ₂ OH | Aqueous solution | 10% | + | + | + | | | | |
| Butanediol | OHCH ₂ CH ₂ CH ₂ CH ₂ OH | Aqueous solution | Concentrated | / | - | - | | | | |
| Butyl Acetate | CH ₃ COOCH ₂ CH ₂ CH ₂ CH ₃ | Technically pure | 100% | / | / | / | 4 | 2 | 4 | 4 |
| Butyl Alcohol | CH ₃ (CH ₂) ₃ OH | Technically pure | 100% | + | + | + | 1 | 2 | 1 | 1 |
| Butyl Ether | (CH ₃ (CH ₂) ₃) ₂ O | Technically pure | 100% | / | - | - | 4 | 3 | 4 | 4 |
| Butyl Phenol | C ₄ H ₉ C ₆ H ₄ OH | Technically pure | 100% | - | | | 4 | 4 | 2 | 4 |
| Butyl Phthalate | HOOC ₆ H ₄ COOC ₄ H ₉ | Technically pure | 100% | + | / | / | | | | |
| Butylene | CH ₂ =CH-CH ₂ CH ₄ | Liquid | 100% | - | | | 2 | 4 | 1 | 4 |
| Butylene Glycol | OHCH ₂ -CH=CH-CH ₂ OH | Technically pure | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Butylene | CH ₂ =CH-CH ₂ CH ₃ | Technically pure | 100% | - | | | 2 | 4 | 1 | 4 |
| Butyric Acid | CH ₃ CH ₂ CH ₂ COOH | Aqueous solution | 20% | + | + | / | | | | |
| Butyric Acid | CH ₃ CH ₂ CH ₂ COOH | Technically pure | 100% | + | + | / | | | | |
| Calcium Acetate | Ca(CH ₃ COO) ₂ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 4 | 4 |
| Calcium Bisulfite | Ca(HSO ₃) ₂ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 2 | 2 |
| Calcium Carbonate | CaCO ₃ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Calcium Chlorate | Ca(ClO ₃) ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Calcium Chloride | CaCl ₂ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Calcium Hydroxide | Ca(OH) ₂ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Calcium Hypochloride | Ca(ClO) ₂ | Aqueous solution | Saturated | + | + | + | 4 | 1 | 1 | 4 |
| Calcium Nitrate | Ca(NO ₃) ₂ | Aqueous solution | 50% | + | + | + | 1 | 1 | 1 | 1 |
| Calcium Sulfate | CaSO ₄ | Aqueous solution | Saturated | + | + | + | | | | |
| Calcium Sulfide | CaS | Aqueous solution | Saturated | / | / | / | 1 | 1 | 1 | 2 |
| Camphor Oil | | | Comm. Comp. | - | - | | | | | |
| Carbon Dioxide | CO ₂ +H ₂ O | Aqueous solution | Indetermined | + | + | + | 1 | 1 | 1 | 1 |
| Carbon Dioxide | CO ₂ | Gas | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Carbon Disulfide | CS ₂ | Technically pure | 100% | / | - | | 4 | 4 | 1 | 4 |
| Carbon Monoxid | CO | Gas | 100% | + | + | + | 2 | 2 | 1 | 2 |
| Carbon Tetrachloride | CCl ₄ | Technically pure | 100% | - | | | | | | |
| Carbonic Acid | H ₂ CO ₃ | Aqueous solution | Saturated | + | + | + | | | | |
| Chloramine | C ₆ H ₅ SO ₂ NNaCl | Aqueous solution | Solution | + | | | | | | |
| Chloric Acid | HClO ₃ | Aqueous solution | 20% | / | | | | | | |
| Chlorine | Cl ₂ | Wet | All | / | - | | 4 | 3 | 1 | 4 |
| Chlorine | Cl ₂ | Gas | 100% | / | / | - | 4 | 2 | 4 | 4 |
| Chlorine | Cl ₂ | Technically pure | 100% | - | | | | | | |
| Chlorine Water | Cl ₂ +H ₂ O | | Saturated | / | / | | | | | |
| Chloro Benzene | C ₆ H ₅ Cl | Technically pure | 100% | / | - | - | | | | |
| Chloro Sulfonic Acid | HClSO ₃ | Technically pure | 100% | - | - | - | | | | |
| Chloroform | CHCl ₃ | Technically pure | 100% | - | | | 4 | 4 | 2 | 4 |
| Chrome Alum | KCr(SO ₄) ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Chrome Alum | KCr(SO ₄) ₂ | | Indetermined | + | + | + | | | | |
| Chromic Acid | CrO ₃ +H ₂ O | Aqueous solution | 10% | / | - | - | 4 | 2/3 | 1 | 4 |
| Chromic Acid | CrO ₃ +H ₂ O | Aqueous solution | 30% | / | - | - | 4 | 2/3 | 1 | 4 |
| Chromic Acid | CrO ₃ +H ₂ O | Aqueous solution | 50% | / | - | - | 4 | 2/3 | 1 | 4 |
| Citric Acid | C ₃ H ₄ (OH)(COOH) ₃ | Aqueous solution | 50% | + | + | + | 2 | 1 | 1 | 2 |
| Compressed Air with Oil | | | 100% | + | + | | | | | |
| Copper Acetate | Cu(COOCH ₃) ₂ | | Saturated | + | | | 2 | 1 | 4 | 4 |
| Copper Chloride | CuCl ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Copper Fluoride | CuF ₂ | Aqueous solution | All | + | + | + | 2 | 1 | 1 | 1 |
| Copper Nitrate | Cu(NO ₃) ₂ | Aqueous solution | Indetermined | + | + | + | 2 | 1 | 1 | 1 |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|----------------------------------|---|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Copper Sulfate | CuSO ₄ | Aqueous solution | Solution | + | + | + | 1 | 1 | 1 | 1 |
| Copper Sulfate | CuSO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Cresol | CH ₃ C ₆ H ₄ OH | Aqueous solution | >=90% | + | + | / | | | | |
| Cresol | CH ₃ C ₆ H ₄ OH | Aqueous solution | Solution | + | + | / | | | | |
| Croton Aldehyde | CH ₃ -CH=CH-CHO | Technically pure | 100% | / | | | | | | |
| Cryolite | Na ₃ AlF ₆ | Aqueous solution | Saturated | / | / | - | | | | |
| Cyclohexane | C ₆ H ₁₂ | Technically pure | 100% | + | + | + | 2 | 4 | 1 | 4 |
| Cyclohexanol | C ₆ H ₁₁ OH | Technically pure | 100% | + | / | / | 2 | 4 | 2 | 3 |
| Cyclohexanone | C ₆ H ₁₀ O | Technically pure | 100% | + | / | / | 4 | 3 | 4 | 4 |
| Decalin (Decahydronaftalene) | C ₁₀ H ₁₈ | Technically pure | 100% | + | / | / | | | | |
| Detergents | | Aqueous solution | Comm. Comp. | + | + | + | | | | |
| Dextrine | | | Comm. Comp. | + | + | + | | | | |
| Dextrose | C ₆ H ₁₂ O ₆ | Aqueous solution | All | + | + | + | | | | |
| Dextrose | C ₆ H ₁₂ O ₆ | Aqueous solution | Saturated | + | + | + | | | | |
| Dextrose | C ₆ H ₁₂ O ₆ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Dibutyl Phthalate | C ₆ H ₄ (COOC ₄ H ₉) ₂ | Technically pure | 100% | - | | | 4 | 2 | 2 | 4 |
| Dibutyl Sebacate | C ₈ H ₁₆ (COOC ₄ H ₉) ₂ | Technically pure | 100% | + | | | 4 | 2 | 2 | 4 |
| Dichloro Benzene | C ₆ H ₄ Cl ₂ | Technically pure | 100% | / | | | 4 | 4 | 2 | 4 |
| Dichloroacetic Acid | Cl ₂ CHCOOH | Aqueous solution | 50% | + | + | + | 2 | 2 | 2 | 2 |
| Dichloroacetic Acid | Cl ₂ CHCOOH | Technically pure | 100% | + | + | / | 3 | 2 | 3 | 3 |
| Dichloroacetic Acid Methyl Ester | Cl ₂ CHCOOCH ₃ | Technically pure | 100% | + | + | + | | | | |
| Dichloroethylene | CHCl=CHCl | Technically pure | 100% | - | | | 2 | | 2 | 4 |
| Diesel Oil | | | 100% | + | / | / | 1 | 4 | 1 | 4 |
| Diethylether | C ₂ H ₅ OC ₂ H ₅ | Technically pure | 100% | - | - | | 4 | 4 | 4 | 4 |
| Diglycolic Acid | HOOCCH ₂ OCH ₂ COOH | Aqueous solution | Saturated | + | | | | | | |
| Di-isobutyl Ketone | (CH ₃) ₂ CHCH ₂ COCH ₂ CH | Technically pure | 100% | + | / | - | 4 | 2 | 4 | 2/3 |
| Dimethyl Amine | (CH ₃) ₂ NH | Technically pure | 100% | / | - | | | | | |
| Dimethyl Formamide | HCON(CH ₃) ₂ | Technically pure | 100% | + | + | / | 4 | 2 | 4 | 3 |
| Diethyl Phthalate | C ₆ H ₄ (COOC ₂ H ₅) ₂ | Technically pure | 100% | + | / | / | 4 | 2 | 2 | 4 |
| Dioxane | (CH ₂) ₄ O ₂ | Technically pure | 100% | + | + | + | 4 | 2/3 | 4 | 4 |
| Ethyl Acetate | CH ₃ COOCH ₂ CH ₃ | Technically pure | 100% | + | / | - | 4 | 2/3 | 4 | 4 |
| Ethyl Alcohol | CH ₃ CH ₂ OH | Aqueous solution | 96% | + | + | / | 2 | 1 | 2 | 1 |
| Ethyl Benzene | C ₆ H ₅ C ₂ H ₅ | Technically pure | 100% | / | / | / | 4 | 4 | 2 | 4 |
| Ethyl Chloride | CH ₃ CH ₂ Cl | Technically pure | 100% | / | - | | 2/3 | 4 | 2 | 4 |
| Ethyl Ether | CH ₃ CH ₂ OCH ₂ CH ₃ | Technically pure | 100% | / | | | 3 | 3 | 4 | 4 |
| Ethylene Chlorohydrin | ClCH ₂ CH ₂ OH | Technically pure | 100% | + | + | / | 4 | 2 | 2 | 2 |
| Ethylene Diamina | NH ₂ CH ₂ CH ₂ NH ₂ | Technically pure | 100% | - | - | - | 2 | 1 | 4 | 2 |
| Ethylene Dichloride | CH ₂ ClCH ₂ Cl | Technically pure | 100% | / | / | | 4 | 4 | 2/3 | 4 |
| Ethylene Glycol | HOCH ₂ -CH ₂ OH | Technically pure | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Ethylene Oxide | C ₂ H ₄ O | Technically pure | 100% | - | | | 3 | 3 | 4 | 4 |
| Exhaust fumes | | | Traces | + | + | + | | | | |
| Fatty Acids | R>C ₆ | Technically pure | 100% | + | + | / | | | | |
| Ferric Chloride | FeCl ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 2 |
| Ferric Nitrate | Fe(NO ₃) ₃ | | Indetermined | + | + | + | | | | |
| Ferric Sulfate | Fe ₂ (SO ₄) ₃ | Aqueous solution | Saturated | + | + | + | | | | |
| Ferrous Chloride | FeCl ₂ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 2 |
| Ferrous Nitrate | Fe(NO ₃) ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Ferrous Sulfate | FeSO ₄ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 2 |
| Fertilizer Salts | | Aqueous solution | 10% | + | + | + | | | | |
| Fertilizer Salts | | Aqueous solution | Saturated | + | + | + | | | | |
| Fluoboric Acid | HF ₄ | Technically pure | 100% | + | + | + | 1 | 1 | | 1 |
| Fluorine Gas Dry | F ₂ | | 100% | - | | | 4 | | 1 | 4 |
| Fluosilicic Acid | H ₂ SiF ₆ | Aqueous solution | 32% | + | + | + | | | | |
| Formaldehyde | CH ₂ O | Aqueous solution | 37% | + | + | + | 1 | 1 | 1 | 1 |
| Formamide | HCONH ₂ | Technically pure | 100% | + | + | + | 2 | 2 | 1 | 1 |
| Formic Acid | HCOOH | Aqueous solution | 50% | + | + | + | 4 | 2 | 4 | 2 |
| Formic Acid | HCOOH | Technically pure | 100% | + | + | + | 4 | 2 | 4 | 2 |
| Freon F-12 | CCl ₂ F ₂ | Technically pure | 100% | - | | | 2 | 2/3 | 2 | 4 |
| Fruit pulp and juice | | | Comm. Comp. | + | | | | | | |
| Furfuryl Alcohol | C ₅ H ₆ O ₂ | Technically pure | 100% | + | + | / | 4 | 2 | | 4 |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|--|--|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | | | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Gelatine | | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Glycerine | C ₃ H ₅ (OH) ₃ | Aqueous solution | All | + | + | + | 1 | 1 | 2 | 1 |
| Glycocoll | NH ₂ CH ₂ COOH | Aqueous solution | 10% | + | + | | | | | |
| Glycolic Acid | HOCH ₂ COOH | Aqueous solution | 37% | + | + | + | | | | |
| Gas containing: | | | | | | | | | | |
| - Carbon Dioxide | CO ₂ | Gas | All | + | + | + | | | | |
| - Carbon Monoxid | CO | Gas | All | + | + | + | | | | |
| - Hydrochloric Acid | HCL | Gas | All | + | + | + | | | | |
| - Hydrochloric Acid | HCL | Gas | All | + | + | + | | | | |
| - Hydrofluoric Acid | HF | Gas | < 0,1 % | + | + | + | | | | |
| - Nitrous Vapours | NO, NO ₂ , N ₂ O ₃ , NOx | Gas | < 0,1 % | + | + | + | | | | |
| - Nitrous Vapours | NO, NO ₂ , N ₂ O ₃ , NOx | Gas | 5% | + | + | + | | | | |
| - Oleum | H ₂ SO ₄ + SO ₃ | Gas | < 0,1 % | - | - | - | | | | |
| - Oleum | H ₂ SO ₄ + SO ₃ | Gas | 5% | - | - | - | | | | |
| - Sulphur Dioxide Liquid | SO ₂ | Gas | All | + | + | + | | | | |
| - Sulphur Trioxide | SO ₃ | Gas | < 0,1 % | - | - | - | | | | |
| - Sulphuric Acid | H ₂ SO ₄ | Gas | All | + | + | + | | | | |
| Heptane | C ₇ H ₁₆ | Technically pure | 100% | + | / | - | 1 | 4 | 1 | 4 |
| Hexane | C ₆ H ₁₄ | Technically pure | 100% | + | / | / | 1 | 4 | 1 | 4 |
| Hydrazine Hydrate | NH ₂ -NH ₂ H ₂ O | Aqueous solution | Solution | + | + | + | 2 | 1 | 1 | |
| Hydrobromic Acid | HBr | | 10% | + | + | + | 3 | 2 | 1 | 3 |
| Hydrobromic Acid | HBr | | 48% | + | + | + | 4 | 1 | 1 | 4 |
| Hydrochloric Acid | HCl | Aqueous solution | 10% | + | + | + | | | | |
| Hydrochloric Acid | HCl | Aqueous solution | 30% | + | + | + | 2/3 | 1 | 2 | 2/3 |
| Hydrochloric Acid | HCl | Aqueous solution | 5% | + | + | + | | | | |
| Hydrochloric Acid | HCl | Aqueous solution | Saturated | + | + | + | | | | |
| Hydrocyanic Acid | HCN | Aqueous solution | Solution | + | + | + | 2 | 2 | 1 | 2 |
| Hydrocyanic Acid | HCN | Technically pure | | + | + | + | 2 | 2 | 1 | 2 |
| Hydrofluoric Acid | HF | Aqueous solution | 10% | + | + | / | 4 | 3 | 2/3 | 3 |
| Hydrofluoric Acid | HF | Aqueous solution | 40% | + | / | / | 4 | 3 | 2/3 | 3 |
| Hydrofluoric Acid | HF | Aqueous solution | 70% | + | / | / | 4 | 3 | 2/3 | 3 |
| Hydrogen Gas | H ₂ | | 100% | + | + | + | 2 | 1 | 1 | 4 |
| Hydrogen Peroxide | H ₂ O ₂ | Aqueous solution | 10% | + | + | + | 2 | 1 | 1 | 2 |
| Hydrogen Peroxide | H ₂ O ₂ | Aqueous solution | 50% | + | + | / | 2 | 1 | 1 | 2 |
| Hydrogen Peroxide | H ₂ O ₂ | Aqueous solution | 90% | + | - | - | 2 | 1 | 1 | 2 |
| Hydrogen Sulfide | H ₂ S | Aqueous solution | Saturated | + | + | + | | | | |
| Hydrogen Sulfide | H ₂ S | | 100% | + | + | / | | | | |
| Hydroquinone | C ₆ H ₄ O ₂ | Aqueous solution | Saturated | + | + | + | 3 | 4 | 2 | 4 |
| Hydroxylamine Sulphate | (NH ₂ OH) ₂ -H ₂ SO ₄ | Aqueous solution | All | + | + | + | | | | |
| Iodine Dry And Wet | I ₂ | | 3% | / | - | | 1 | 2 | 1 | 1 |
| Iso-Octane | C ₈ H ₁₈ | | 100% | / | / | - | 1 | 4 | 1 | 4 |
| Isopropyl Alcohol | (CH ₃) ₂ CHOH | Technically pure | 100% | + | + | + | 2 | 1 | 1 | 2 |
| Isopropyl Ether | (CH ₃) ₂ CHOCH(CH ₃) ₂ | Technically pure | 100% | / | - | - | 2/3 | 3 | 4 | 4 |
| Lactic Acid | CH ₃ CHOHCOOH | Aqueous solution | <=28% | + | + | + | 2 | 1 | 1 | 3 |
| Lanoline | | | Comm. Comp. | + | + | + | 1 | 4 | 1 | 4 |
| Lard Oil | | | Comm. Comp. | + | | | | | | |
| Lead Acetate | Pb(CH ₃ COO) ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 4 | 4 |
| Lead Chloride | PbCl ₂ | Aqueous solution | Saturated | + | + | | | | | |
| Lead Nitrate | Pb(NO ₃) ₂ | Aqueous solution | Saturated | + | | | 1 | 1 | 1 | 1 |
| Lead Sulfate | PbSO ₄ | Aqueous solution | Saturated | + | + | + | | | | |
| Linseed Oil | | | Comm. Comp. | | | / | 1 | 3 | 1 | 4 |
| Lubricating Oils | | | Comm. Comp. | - | | | 2 | 4 | 1 | 4 |
| Lubricating Oils,Free Of Aromatic | | | Comm. Comp. | + | + | / | 1 | 4 | 1 | 4 |
| Magnesium Carbonate | MgCO ₃ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Magnesium Chloride | MgCl ₂ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Magnesium Nitrate | Mg(NO ₃) ₂ | Aqueous solution | Indetermined | + | + | + | | | | |
| Magnesium Sulfate | MgSO ₄ | | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Maize Oil | | | Comm. Comp. | + | + | / | 1 | 1 | 1 | 4 |
| Maleic Acid | HOOC-CH=CH-COOH | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Malic Acid | HOOCCH ₂ CHOHCOOH | Aqueous solution | Saturated | + | | | 1 | 4 | 1 | 2 |
| Mercuric Chloride | HgCl ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|--|---|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Mercuric Cyanide | Hg(CN) ₂ | Aqueous solution | All | + | + | + | | | | |
| Mercuric Sulfate | HgSO ₄ | Aqueous solution | Saturated | + | + | + | | | | |
| Mercurous Nitrate | HgNO ₃ | Aqueous solution | Saturated | + | + | + | | | | |
| Mercury | Hg | Technically pure | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Methane | CH ₄ | | 100% | + | | | 1 | 3 | 1 | 3 |
| Methanesulfonic Acid | CH ₃ SO ₃ H | Aqueous solution | 50% | / | / | | | | | |
| Methanesulfonic Acid | CH ₃ SO ₃ H | Technically pure | 100% | - | - | | | | | |
| Methyl Acetate | CH ₃ COOCH ₃ | Technically pure | 100% | + | | | 4 | 2 | 4 | 4 |
| Methyl Alcohol | CH ₃ OH | Technically pure | 100% | + | + | + | | | | |
| Methyl Amine | CH ₃ NH ₂ | Aqueous solution | 32% | / | | | 4 | 1 | 4 | 2 |
| Methyl Bromide | CH ₃ Br | Technically pure | 100% | / | | | 4 | 4 | 1 | 4 |
| Methyl Chloride | CH ₂ Cl | Technically pure | 100% | / | | | 4 | 3 | 1 | 4 |
| Methyl Ethyl Ketone | CH ₃ COCH ₂ CH ₃ | | 100% | + | / | - | 4 | 2 | 4 | 4 |
| Methylene Chloride | CH ₂ Cl ₂ | | 100% | / | | | 4 | 4 | 3 | 4 |
| Milk | | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Mineral oil | | | Comm. Comp. | / | / | - | 1 | 4 | 1 | 4 |
| Mixed Acids (Chromic, Sulphuric) | H ₂ CrO ₄ /H ₂ SO ₄ /H ₂ O | | 50/15/35% | - | | | | | | |
| Mixed Acids (Sulphuric, Nitric) | H ₂ SO ₄ /HNO ₃ /H ₂ O | | 10/20/70% | / | / | / | | | | |
| Mixed Acids (Sulphuric, Nitric) | H ₂ SO ₄ /HNO ₃ /H ₂ O | | 48/49/3 | - | - | - | | | | |
| Mixed Acids (Sulphuric, Nitric) | H ₂ SO ₄ /HNO ₃ /H ₂ O | | 50/50% | - | - | - | | | | |
| Mixed Acids (Sulphuric, Phosphoric) | H ₂ SO ₄ /H ₃ PO ₄ /H ₂ O | | 30/60/10% | + | / | | | | | |
| Molasses | | | Comm. Comp. | + | / | / | 1 | 1 | 1 | 1 |
| Monochloroacetic Acid | ClCH ₂ COOH | Aqueous solution | 50% | + | / | / | 4 | 2 | | 4 |
| Monochloroacetic Acid Ethyl Ester | ClCH ₂ COOCH ₂ CH ₃ | Technically pure | 100% | + | + | + | | | | |
| Naphthalene | C ₁₀ H ₈ | Technically pure | 100% | + | / | / | | | | |
| Nickel Chloride | NiCl ₂ | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 1 |
| Nickel Nitrate | Ni(NO ₃) ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Nickel Sulfate | NiSO ₄ | Aqueous solution | Solution | + | + | / | 1 | 1 | 1 | 1 |
| Nickel Sulfate | NiSO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Nicotine | C ₁₀ H ₁₄ N ₂ | | Indetermined | + | + | + | | | | |
| Nitric Acid | HNO ₃ | Aqueous solution | 20% | + | / | / | 4 | 4 | 2/3 | 4 |
| Nitric Acid | HNO ₃ | Aqueous solution | 40% | / | - | - | 4 | 4 | 2/3 | 4 |
| Nitric Acid | HNO ₃ | Aqueous solution | 70% | - | - | - | 4 | 4 | 2/3 | 4 |
| Nitric Acid | HNO ₃ | Technically pure | 100% | - | | | 4 | 4 | 2/3 | 4 |
| Nitrobenzene | C ₆ H ₅ NO ₂ | | 100% | + | / | / | | | | |
| Nitroethane | CH ₃ CH ₂ NO ₂ | Technically pure | 100% | + | / | / | 4 | 2 | 4 | 2 |
| Nitromethane | CH ₃ NO ₂ | Technically pure | 100% | + | / | / | 4 | 2 | 4 | 2 |
| Nitrotoluene | CH ₃ C ₆ H ₄ NO ₂ | Technically pure | 100% | + | + | / | | | | |
| Nitrous Gases | NO _x | Anhydrous | Solution | + | + | + | 1 | 1 | 1 | 1 |
| Oleic Acid | C ₁₇ H ₃₃ COOH | Technically pure | 100% | + | + | / | 2 | 3 | 1 | 4 |
| Oleum | H ₂ SO ₄ +SO ₃ | | 10% | - | | | 4 | 4 | 1 | 4 |
| Oleum | H ₂ SO ₄ +SO ₃ | | High | - | | | 4 | 4 | 1 | 4 |
| Oleum | H ₂ SO ₄ +SO ₃ | | Traces | - | | | 4 | 4 | 1 | 4 |
| Olive Oil | | | Comm. Comp. | + | + | / | 1 | 4 | 1 | 4 |
| Oxalic Acid | HOOC ₂ COOH | Aqueous solution | 10% | + | + | + | 1 | 1 | 1 | 1 |
| Oxalic Acid | HOOC ₂ COOH | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Oxygen | O ₂ | | All | + | + | / | 2 | 1 | 1 | 4 |
| Ozone Gas | O ₃ | Aqueous solution | Saturated | / | - | | 4 | 1 | 1 | 4 |
| Ozone Gas | O ₃ | | >2% | / | - | | 4 | 1 | 1 | 4 |
| Palmitic Acid | CH ₃ (CH ₂) ₁₄ COOH | | 70% | / | - | - | | | | |
| Paraffin Emulsion | | Water-emulsie | Comm. Comp. | / | / | / | 1 | 4 | 1 | 4 |
| Paraffin Oil | | | Comm. Comp. | + | + | + | 1 | 4 | 1 | 4 |
| Peanut Oil | | | Comm. Comp. | + | | | 1 | 3 | 1 | 4 |
| Perchloric Acid | HClO ₄ | Aqueous solution | 10% | + | + | + | 4 | 1 | 1 | 4 |
| Perchloric Acid | HClO ₄ | Aqueous solution | 70% | + | / | - | 4 | 1 | 1 | 4 |
| Perchloric Acid | HClO ₄ | Aqueous solution | 10% | + | + | | 4 | 1 | 2 | 4 |

Material properties of PE

| Component | | Concentration | | Pipe and fittings | | | Elastomeric seals | | | |
|--------------------------------------|---|------------------|--------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Petroleum | | Technically pure | 100% | + | + | / | 1 | 4 | 1 | 4 |
| Petroleum Ether | | Technically pure | 100% | + | / | / | 1 | 4 | 1 | 4 |
| Phenol | C ₆ H ₅ OH | Aqueous solution | 1% | + | / | | 4 | 4 | 2 | 4 |
| Phenol | C ₆ H ₅ OH | Aqueous solution | 90% | + | + | | 4 | 4 | 1 | 4 |
| Phenylhydrazine | C ₆ H ₅ NHNH ₂ | Technically pure | 100% | / | / | / | 3 | 3 | 2 | 4 |
| Phenylhydrazine Hydrochloride | C ₆ H ₅ NHNH ₂ HCl | Aqueous solution | Saturated | + | | | | | | |
| Phosphoric Acid | H ₃ PO ₄ | Aqueous solution | 25% | + | + | + | 1 | 1 | 1 | 1 |
| Phosphoric Acid | H ₃ PO ₄ | Aqueous solution | 50% | + | + | + | 1 | 1 | 1 | 1 |
| Phosphoric Acid | H ₃ PO ₄ | Aqueous solution | 85% | + | + | / | 1 | 1 | 1 | 1 |
| Phosphorous Penta-Trichloride | PCl ₅ -PCl ₃ | Technically pure | 100% | + | / | / | | | | |
| Phosphorous Pentoxide | P ₂ O ₅ | Technically pure | 100% | + | + | + | | | | |
| Photographic Developer | | | Comm. Comp. | + | | | 1 | 2 | 1 | 2 |
| Photographic Emulsion | | | Comm. Comp. | + | + | | | | | |
| Phthalic Acid | C ₆ H ₄ (COOH) ₂ | Aqueous solution | 50% | + | + | + | | | | |
| Picric Acid | C ₆ H ₂ (OH)(NO ₂) ₃ | Aqueous solution | 1% | + | + | / | 2 | 1 | 1 | 2 |
| Potassium Acetate | CH ₃ COOK | Aqueous solution | Saturated | + | + | + | 1 | 1 | 2 | 4 |
| Potassium Bicarbonate | KHCO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Bichromate | K ₂ Cr ₂ O ₇ | Aqueous solution | Saturated | + | + | | 2 | 1 | 1 | 2 |
| Potassium Bisulfate | KHSO ₄ | Aqueous solution | Indetermined | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Borate | K ₃ BO ₃ | Aqueous solution | Saturated | + | + | + | | | | |
| Potassium Bromate | KBrO ₃ | Aqueous solution | Saturated | + | + | / | 1 | 1 | 1 | 1 |
| Potassium Bromide | KBr | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Carbonate | K ₂ CO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Chlorate | KClO ₃ | Aqueous solution | Saturated | + | + | + | 4 | 1 | 1 | 2 |
| Potassium Chloride | KCl | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Chromate | K ₂ CrO ₄ | Aqueous solution | Saturated | + | + | | 2 | 1 | 1 | 2 |
| Potassium Cyanide | KCN | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Ferricyanide | K ₄ Fe(CN) ₆ H ₂ O | Aqueous solution | Saturated | + | + | + | | | | |
| Potassium Fluoride | KF | Aqueous solution | Saturated | + | + | + | | | | |
| Potassium Hydroxide | KOH | Aqueous solution | <=60% | + | + | + | 2 | 1 | 2/3 | 1 |
| Potassium Hypochlorite | KClO | Aqueous solution | Indetermined | + | / | / | | | | |
| Potassium Iodide | KI | Aqueous solution | Saturated | + | + | + | | | | |
| Potassium Nitrate | KNO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Potassium Perborate | KBO ₃ | Aqueous solution | Indetermined | + | + | + | | | | |
| Potassium Perchlorate | KClO ₄ | Aqueous solution | Saturated | + | + | + | 3 | 1 | 1 | 3 |
| Potassium Permanganate | KMnO ₄ | Aqueous solution | 10% | + | + | + | | | | |
| Potassium Permanganate | KMnO ₄ | Aqueous solution | Saturated | + | + | / | | | | |
| Potassium Persulfate | K ₂ S ₂ O ₈ | Aqueous solution | Saturated | + | + | + | | | | |
| Potassium Phosphates | K ₂ HPO ₄ KH ₂ PO ₄ | Aqueous solution | All | + | + | + | | | | |
| Acids | | | | | | | | | | |
| Potassium Sulfate | K ₂ SO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Propane Gas | CH ₃ CH ₂ CH ₃ | | 100% | + | | | 1 | 4 | 1 | 4 |
| Propane Gas | CH ₃ CH ₂ CH ₃ | | 100% | + | | | 1 | 4 | 1 | 4 |
| Propionic Acid | CH ₃ CH ₂ COOH | Aqueous solution | 50% | + | + | + | 2 | 4 | 1 | 4 |
| Propyl Alcohol | C ₃ H ₇ OH | Aqueous solution | 97% | + | + | + | | | | |
| Propylene Glycol | CH ₃ CHOHCH ₂ OH | Technically pure | 100% | + | + | + | 2 | 1 | 1 | 1 |
| Propylene Oxid | | Technically pure | 100% | + | | | 4 | 1 | 4 | 4 |
| Pyridine | C ₅ H ₅ N | Technically pure | 100% | + | / | / | 4 | 4 | 4 | 4 |
| Silicic Acid | H ₂ SiO ₃ | Aqueous solution | All | + | + | + | | | | |
| Silicone Oil | | | Comm. Comp. | + | + | / | 1 | 1 | 1 | 1 |
| Silver Cyanide | AgCN | Aqueous solution | All | + | + | + | | | | |
| Silver Nitrate | AgNO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Silver Sulfate | Ag ₂ SO ₄ | Aqueous solution | Saturated | + | + | + | | | | |
| Soap | | Aqueous solution | All | + | + | + | 1 | 1 | 1 | 2 |
| Sodium Acetate | CH ₃ COONa | Aqueous solution | Saturated | + | + | + | 2 | 1 | 4 | 4 |
| Sodium Alum | NaAl(SO ₄) ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Sodium Benzoate | C ₆ H ₅ COONa | | Saturated | + | + | + | | | | |
| Sodium Bicarbonate | NaHCO ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Sodium Bichromate | Na ₂ Cr ₂ O ₇ | Aqueous solution | Saturated | + | + | + | | | | |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|-------------------------|--|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | °C | °C | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Sodium Bisulfate | NaHSO ₄ | Aqueous solution | 10% | + | + | + | 1 | 1 | 1 | 2 |
| Sodium Bisulfite | NaHSO ₃ | Aqueous solution | 100% | + | + | + | 1 | 1 | 1 | 2 |
| Sodium Bromate | NaBrO ₃ | Aqueous solution | All | + | / | | | | | |
| Sodium Bromide | NaBr | Aqueous solution | Saturated | + | + | + | | | | |
| Sodium Carbonate (Soda) | Na ₂ CO ₃ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 1 |
| Sodium Chlorate | NaClO ₃ | Aqueous solution | All | + | + | + | 2/3 | 2 | 1 | 4 |
| Sodium Chloride | NaCl | Aqueous solution | Solution | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Chloride | NaCl | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Chromate | Na ₂ CrO ₄ | Aqueous solution | Solution | + | | | | | | |
| Sodium Cyanide | NaCN | Aqueous solution | All | + | + | + | 2 | 1 | 1 | 1 |
| Sodium Disulphite | Na ₂ S ₂ O ₅ | Aqueous solution | All | + | | | 1 | 1 | 1 | 2 |
| Sodium Ferrocyanide | Na ₄ FeCN ₆ | Aqueous solution | Saturated | + | + | | | | | |
| Sodium Fluoride | NaF | Aqueous solution | Saturated | + | | | | | | |
| Sodium Hydroxide | NaOH | Aqueous solution | 10% | + | + | + | 3 | 1 | 2 | 2 |
| Sodium Hydroxide | NaOH | Aqueous solution | 30% | + | + | + | 4 | 1 | 3 | 2 |
| Sodium Hydroxide | NaOH | Aqueous solution | 50% | + | + | + | 1 | 1 | 3 | 2 |
| Sodium Hypochlorite | NaClO | Aqueous solution | 12,50% | / | - | | 4 | 1 | 1 | 4 |
| Sodium Hypochlorite | NaClO | Aqueous solution | 3% | + | / | / | 4 | 1 | 1 | 4 |
| Sodium Iodide | NaI | Aqueous solution | All | + | | | | | | |
| Sodium Metasilicate | Na ₂ SiO ₃ | Aqueous solution | <5% | + | + | + | | | | |
| Sodium Metasilicate | Na ₂ SiO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Nitrate | NaNO ₃ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Nitrite | NaNO ₂ | Aqueous solution | Saturated | + | | | | | | |
| Sodium Oxalate | Na ₂ C ₂ O ₄ | Aqueous solution | Saturated | + | | | | | | |
| Sodium Perborate | NaBO ₃ | Aqueous solution | All | + | | | 2 | 1 | 1 | 2 |
| Sodium Perchlorate | NaClO ₄ | Aqueous solution | Indetermined | + | | | | | | |
| Sodium Peroxide | Na ₂ O ₂ | Solution | | + | | | 2 | 1 | 1 | 2 |
| Sodium Persulphate | Na ₂ S ₂ O ₈ | Aqueous solution | Saturated | + | + | + | | | | |
| Sodium Phosphate | Na ₃ PO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Phosphate | Na ₂ HPO ₄ | Aqueous solution | Saturated | + | + | | 1 | 1 | 1 | |
| Monoacid | | | | | | | | | | |
| Sodium Sulfate | Na ₂ SO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sodium Sulfide | Na ₂ S | Aqueous solution | Solution | + | + | + | 2 | 1 | 1 | 3 |
| Sodium Sulfide | Na ₂ S | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 3 |
| Sodium Sulfite | Na ₂ SO ₃ | Aqueous solution | Saturated | + | + | + | | | | |
| Sodium Thiocyanate | NaSCN | Aqueous solution | Indetermined | + | + | + | | | | |
| Sodium Thiosulphate | Na ₂ S ₂ O ₃ | Aqueous solution | Saturated | + | + | + | 3 | 1 | 1 | 2 |
| Stannic Chloride | SnCl ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 2 |
| Stannous Chloride | SnCl ₂ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Stearic Acid | C ₁₇ H ₃₅ COOH | Technically pure | 100% | + | | / | 1 | 1 | 1 | 1 |
| Styrene | C ₆ H ₅ CH=CH ₂ | | 100% | / | - | - | 4 | 4 | 1 | 4 |
| Sugar Syrup | | | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Sulfamic Acid | HSO ₃ NH ₂ | Aqueous solution | 20% | - | | | | | | |
| Sulphur | S | | 100% | + | + | + | | | | |
| Sulphur Dioxide Liquid | SO ₂ | Aqueous solution | Saturated | + | + | + | | | | |
| Sulphur Dioxide Liquid | SO ₂ | Technically pure | 100% | - | | | | | | |
| Sulphur Dioxide Liquid | SO ₂ | Technically pure | 100% | + | + | + | | | | |
| Sulphur Trioxide | SO ₃ | | 100% | - | | | | | | |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 10% | + | + | + | 2 | 1 | 2 | 2 |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 50% | + | + | + | 4 | 1 | 2 | 4 |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 80% | + | + | / | 4 | 2 | 2 | 4 |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 90% | / | / | - | | | | |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 96% | - | - | - | 4 | 4 | 2 | 4 |
| Sulphuric Acid | H ₂ SO ₄ | Aqueous solution | 98% | - | - | - | | | | |
| indetermined | | | | | | | | | | |
| Sulphuric Acid | H ₂ SO ₄ | Technically pure | 100% | - | - | - | | | | |
| Sulphurous Acid | H ₂ SO ₃ | Aqueous solution | Saturated | + | + | + | 2 | 2 | 1 | 2 |
| Tallow Emulsion | | | Comm. Comp. | + | / | / | 2 | 2 | 1 | 4 |
| Tannic Acid | C ₇₆ H ₅₂ O ₄₆ | Aqueous solution | All | + | + | + | 2 | 2 | 2 | 2 |
| Tartaric Acid | COOH(CHOH) ₂ COOH | Aqueous solution | All | + | + | + | | | | |
| Tetrachloroethane | CHCl ₂ CHCl ₂ | | 100% | / | - | | 4 | 4 | 1 | 4 |

Material properties of PE

| Component | | | Concentration | Pipe and fittings | | | Elastomeric seals | | | |
|--------------------------------|--|------------------|---------------|-------------------|----|----|-------------------|------|-----|-----|
| Name | Formula | Remark | | HDPE | | | NBR | EPDM | FPM | SBR |
| | | | | °C | | | °C | °C | °C | °C |
| | | | | 20 | 40 | 60 | 20 | 20 | 20 | 20 |
| Tetrachloroethylene | Cl ₂ C=CCl ₂ | | 100% | / | - | | 4 | 4 | 2 | 4 |
| Tetraethyl Lead | Pb(C ₂ H ₅) ₄ | Technically pure | 100% | + | | | 2 | 4 | 1 | 4 |
| Tetrahydrofurane | (CH ₂) ₄ O | | 100% | / | - | | 4 | 4 | 4 | 4 |
| Tetrahydronaphthalene | C ₁₀ H ₁₂ | | 100% | / | | | | | | |
| Thionyl Chloride | SOCl ₂ | Technically pure | 100% | - | | | 2/3 | 1 | 1 | 2/3 |
| Thiophene | C ₄ H ₈ S | | 100% | / | / | / | 4 | 4 | 4 | 4 |
| Toluene | C ₆ H ₅ CH ₃ | Technically pure | 100% | / | - | - | 4 | 4 | 2 | 4 |
| Toluic Acid | CH ₃ C ₆ H ₄ COOH | | 50% | / | | | | | | |
| Transformer Oil | | | Comm. Comp. | + | / | / | 2 | 4 | 2 | 4 |
| Tributylphosphate | (C ₄ H ₉) ₃ PO ₄ | Technically pure | 100% | + | + | + | 4 | 2 | 3 | 4 |
| Trichlorethylene | ClCH=CCl ₂ | Technically pure | 100% | - | - | - | 4 | 4 | 2 | 4 |
| Trichloroacetic Acid | CCl ₃ COOH | Aqueous solution | 50% | + | / | / | 2 | 2 | 4 | 4 |
| Trichloroacetic Acid | CCl ₃ COOH | Technically pure | 100% | + | / | - | 2 | 2 | 4 | 4 |
| Trichloroethane | CH ₃ CCl ₃ | Technically pure | 100% | / | | | 4 | 4 | 1 | 4 |
| Tricresylphosphate | (CH ₃ C ₆ H ₄ O) ₃ PO ₄ | Technically pure | 100% | + | + | + | 4 | 2 | 2 | 4 |
| Triethanolamine | N(CH ₂ CH ₂ OH) ₃ | Technically pure | 100% | + | + | / | 3 | 1 | 4 | 2 |
| Triocetylphosphate | (C ₈ H ₁₇) ₃ PO ₄ | Technically pure | 100% | / | | | 4 | 1 | 2 | 4 |
| Turpentine Oil | | Technically pure | 100% | / | - | - | 2 | 4 | 1 | 4 |
| Urea | NH ₂ CONH ₂ | Aqueous solution | <=10% | + | + | + | 1 | 1 | 1 | 1 |
| Urea | NH ₂ CONH ₂ | Aqueous solution | 33% | + | + | + | 1 | 1 | 1 | 1 |
| Urine | | | Indetermined | + | + | + | | | | |
| Vaseline Oil | | | Comm. Comp. | + | + | / | 1 | | 1 | 4 |
| Vegetable Oils and fats | | | Comm. Comp. | + | / | | 1 | 4 | 1 | 3 |
| Water | H ₂ O | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Water | H ₂ O | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Water | H ₂ O | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Water | H ₂ O | | 100% | + | + | + | 2 | 1 | 2 | 2 |
| Water | H ₂ O | | 100% | + | + | + | 2 | 1 | 2 | 2 |
| Water, Rain | H ₂ O | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Water, Salt | H ₂ O+NaCl | | Saturated | + | + | + | 1 | 1 | 1 | 1 |
| Water, Sea | | | 100% | + | + | + | 1 | 1 | 1 | 1 |
| Wine | | | Comm. Comp. | + | + | + | 1 | 1 | 1 | 1 |
| Wine Vinegar | | Technically pure | Comm. Comp. | + | + | + | | | | |
| Xylene | C ₆ H ₄ (CH ₃) ₂ | | 100% | - | | | 4 | 4 | 2 | 4 |
| Zinc Acetate | Zn(CH ₃ COO) ₂ | | Indetermined | + | + | + | 2 | 1 | 4 | 4 |
| Zinc Chloride | ZnCl ₂ | Aqueous solution | Solution | + | + | + | 2 | 1 | 1 | 2 |
| Zinc Chloride | ZnCl ₂ | Aqueous solution | Saturated | + | + | + | 2 | 1 | 1 | 2 |
| Zinc Chromate | ZnCrO ₄ | Aqueous solution | Indetermined | + | + | + | | | | |
| Zinc Cyanide | Zn(CN) ₂ | Aqueous solution | All | + | + | + | | | | |
| Zinc Nitrate | Zn(NO ₃) ₂ | Aqueous solution | Indetermined | + | + | + | | | | |
| Zinc Sulfate | ZnSO ₄ | Aqueous solution | Solution | + | + | + | 1 | 1 | 1 | 1 |
| Zinc Sulfate | ZnSO ₄ | Aqueous solution | Saturated | + | + | + | 1 | 1 | 1 | 1 |

Table 2.3 Chemical resistance. The data is based on the latest knowledge. When in doubt please contact Technical Support.