



Technical Information

Chemical resistance list



1. Chemical resistance

Various processes, such as absorption of the liquid (swelling), extraction of soluble material components (shrinkage) and chemical reactions (hydrolysis, oxidation etc.) may arise as a result of the flow substances coming into contact with the pipe wall material that may cause property changes to the pipes and pipe sections.

The following information is always necessary to determine the chemical resistance:

- attacking medium, composition (chemical designation)
- temperature
- share (concentration)
- information on exposure time, frequency and flow rate
- other conveyed media

1.1 Resistance list

The way in which the Geberit HDPE pipes and fittings behave when coming into contact with the flow substances is classified as follows:

Resistant (+):	the pipe wall material is generally deemed to be suitable.
Resistant to a certain extent (0):	the suitability of the pipe wall material must be verified for the specific application; further testing may be required.
Not resistant (-):	the pipe wall material is generally deemed to be unsuitable.



The resistance of the seals (EPDM) differs from the resistance of the HDPE pipes and fittings. Geberit HDPE can be used without hesitation from pH 0 to pH 14.

%	Percentage values refer to the percentage by weight
VL	Aqueous solution with percent by weight ≤ 10 %
L	Aqueous solution with percent by weight > 10 %
GL	At 20 °C, saturated aqueous solution
TR	Chemical is, at a minimum, technically pure
H	Commercially available composition
S	Traces < 0.1 %
G	Typically used percent by weight
All	Saturated solution and every dilution

The information given in the following table is based on immersion tests without mechanical stress and corresponds to the current level of knowledge. For example, a mixture of different flow substances may lead to new assessment criteria which are not covered by the table below.

The information given makes no assertions. No warranty claims may be derived from it.

Even if Geberit HDPE has been deemed resistant to a substance, swelling may occur (extension of the pipe); consideration must also be given to the fact that a number of substances could measurably diffuse through Geberit HDPE.

Template

For a template for resistance queries, see www.international.geberit.com under "Download centre".

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
1,2-dibromethane		0		-	-
2-ethylhexanol		+		0	+
4-methyl-2-pentanol		+		0	+
Acetaldehyde	40	+	+	0	0
Acetaldehyde	TR	+	0	0	0
Acetaldehyde + acetic acid	90:10:00	+			0
Acetamide	TR	+	+	+	+
Acetic acid	70	+	+	+	-
Acetic acid	100	+	0	0	-
Acetic acid butyl ester		+		0	0
Acetic acid ethyl ester (ethyl acetate)	TR	+	0	0	0
Acetic anhydride	TR	+	0	0	0
Acetic anhydride (ethanoic anhydride)	TR	+	0	0	0
Acetoacetic ester		+			0
Acetone	VL	+	+	+	+
Acetone	TR	+	+	0	+
Acetophenone	TR	+			+
Acetylene		+			+
Acronal dispersions	H	+		0	+
Acronal solutions	H	0			-
Acrylic acid emulsions		+	+	+	+
Acrylonitrile	TR	+	+	+	+
Activin (chloramine 1 %)		+	+	+	+
Adipic acid ester		+		0	+
Adipic acids	GL	+	+	+	+
Allyl acetate		+		0	0
Allyl alcohol	96	+	+	+	+
Allyl chloride		0		-	-
Alum (potassium-aluminium sulphate)	All	+	+	+	+
Aluminium chloride	VL	+	+	+	+
Aluminium chloride	GL	+	+	+	+
Aluminium chloride, solid		+	+	+	+
Aluminium fluoride	GL	+	+	+	+
Aluminium hydroxide		+	+	+	+
Aluminium meta phosphate		+	+	+	+
Aluminium sulphate	All	+	+	+	+
Aluminium sulphate, solid		+	+	+	+
Amido sulphate (amido sulphonic acid salts)	All	+	+	+	+
Amido sulphonic acid	All	+	+	+	+
Amino acids		+	+	+	+
Ammonia solution (aqueous ammonia)	All	+	+	+	+
Ammonia, gaseous	100	+	+	+	+
Ammonia, liquid	100	+	+	+	+
Ammonium acetate	All	+	+	+	+
Ammonium carbonate	All	+	+	+	+
Ammonium carbonate and hydrogen carbonate	GL	+	+	+	+
Ammonium chloride	All	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Ammonium chloride (salmiac)	All	+	+	+	+
Ammonium dihydrogen phosphate	GL	+	+	+	+
Ammonium fluoride	L	+	+	+	+
Ammonium hydrogen sulphate	All	+	+	+	+
Ammonium hydrosulphide	All	+	+	+	+
Ammonium hydroxide (aqueous ammonia)	All	+	+	+	+
Ammonium iron (II) sulphate	GL	+	+	+	+
Ammonium meta phosphate		+	+	+	+
Ammonium nitrate	All	+	+	+	+
Ammonium phosphate	All	+	+	+	+
Ammonium sulphide	All	+	+	+	+
Ammonium thiocyanate		+	+	+	+
Amyl alcohol	TR	+	+	+	+
Amyl chloride	100	0		-	-
Amyl phthalate		+		0	0
Aniline (phenylamine)	GL	0	0	0	-
Aniline chlorine hydrate	All	+	0	0	0
Animal glue (bone glue)	H	+	+	+	+
Anise oil	TR	0	0	-	-
Anon (cyclohexanone)	TR	+	0	0	-
Anthraquinone sulphonic acid	1	+	+	+	+
Antiformin (benzaloxime)	2	+			0
Antifreeze agent (motor vehicles)	H	+	+	+	+
Antimony pentachloride		+	+	+	+
Antimony trichloride	90	+	+	+	+
Antimony trichloride, anhydrous		+	+	+	+
Apple juice	H	+	+	+	+
Aqua regia	TR	-	-	-	-
Aqueous ammonia (ammonia water, ammonium hydroxide)	All	+	+	+	+
Arklone = Freon, Frigen (fluorochlorinated hydrocarbons CFC)	100	0	-		-
Arsenic acid	All	+	+	+	+
Arsenic acid anhydride		+	+	+	+
Ascorbic acid (Vitamin C)		+	+	+	+
Asphalt		+		0	-
Barium carbonate chem. 98/99 %	All	+	+	+	+
Barium hydroxide	All	+	+	+	+
Barium salt	All	+	+	+	+
Battery acid (sulphuric acid 34 %)	H	+	+	+	+
Beef fat		+	+	0	0
Beer	H	+	+	+	+
Beer caramel	H	+	+	+	+
Beeswax	H	+	+	-	-
Benzaldehyde	All	+	+	0	0
Benzaldehyde in isopropanol	1	+	+	+	-
Benzaloxime (antiformin)	2	+			+
Benzene	TR	0	0	-	-

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Benzene sulphonic acid		+	+	+	+
Benzoic acid	All	+	+	+	+
Benzoic acid sodium (sodium benzoate)	36	+	+	+	+
Benzoyl chloride	TR	0	0	0	-
Benzyl alcohol	TR	+	+	+	0
Benzyl chloride		0		-	-
Bichromate sulphuric acid (chromic acid/sulphuric acid)	TR	-	-	-	-
Bismuth nitrate, aqueous	All	+	+	+	+
Bismuth salts		+	+	+	+
Bisulphite lye		+	+	+	+
Bitumen		+		0	-
Bone glue (animal glue)	H	+	+	+	+
Bone oil		+	+	+	-
Borax (disodium tetraborate)	All	+	+	+	+
Boric acid	All	+	+	+	+
Boric acid methyl ester		+		-	0
Boron trifluoride		+		0	-
Brake fluid		+	+	+	0
Brandy (spirits)	H	+	+	+	+
Brandy	H	+	+		+
Bromic acid	40	-	-	-	-
Bromine, liquid and gaseous	All	-	-	-	-
Bromochloromethane		-	-	-	-
Butadiene	50	+			-
Butadiene, gaseous	TR	+			-
Butanediol	All	+	+	+	+
Butanetriol	All	+	+	+	+
Butanol	All	+	+	+	+
Butanone		+		-	+
Butoxyl (methoxybutyl acetate)		+		0	0
Butter		+	+	+	0
Butter milk		+			+
Butyl acetate	TR	+	0	0	0
Butyl acrylate		+		0	0
Butyl alcohol		+	+	+	+
Butyl benzyl phthalate		+	+	+	0
Butylene glycol	TR	+	+	+	+
Butylene, liquid	TR	-	-	-	-
Butylphenol	TR	0			-
Butynediol	100	+	+	+	+
Butyric acid	All	+	+	0	0
Calcium carbide		+	+	+	+
Calcium carbonate	GL	+	+	+	+
Calcium chloride	All	+	+	+	+
Calcium hydroxide	GL	+	+	+	+
Calcium hypochlorite (chlorinated lime)	GL	0	0	-	0

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Calcium nitrate	50	+	+	+	+
Calcium oxide (powder)		+	+	+	+
Calcium phosphate		+	+	+	+
Calcium sulphate (gypsum)	GL	+	+	+	+
Calgon (sodium hexametaphosphate)	All	+	+	+	+
Camphor	TR	+		0	-
Camphor		+		0	-
Camphor oil	TR	-	-	-	-
Cane sugar		+	+	+	+
Carbazole		+	+	+	0
Carbolic acid	All	+	+	+	0
Carbolic acid (phenol)	All	+	0	0	-
Carbon disulphide	TR	0	-	-	-
Carbon tetrachloride	TR	-	-	-	-
Carbonic acid (carbon dioxide, soda water)	All	+	+	+	+
Caster oil	TR	+	+	+	0
Caustic potash	50	+	+	+	+
Caustic soda (sodium hydroxide)	All	+	+	+	+
Caustic soda (sodium hydroxide)	All	+	+	+	+
Cetyl alcohol (hexadecanol)		+	+	+	0
Chloracetic acid	All	+	+	+	0
Chloral hydrate	All	+	+	+	0
Chloramine T	TR	+			+
Chloramine T	1	+	+	+	+
Chloric acid	1	+	+	+	0
Chloric acid	10	+	+	+	0
Chloric acid	20	0		-	0
Chlorinated carbonic acid ester		+		0	-
Chlorinated lime (calcium hypochlorite)	GL	0	0	-	0
Chlorinated water	VL	+		0	0
Chlorinated water	GL	0	0	-	0
Chlorine, gaseous, damp	0.5	0		-	0
Chlorine, gaseous, damp	1.0	-	-	-	-
Chlorine, gaseous, damp	97	-	-	-	-
Chlorine, gaseous, dry	TR	0	0	-	-
Chlorine, liquid	TR	-	-	-	-
Chlorobenzene	TR	0		-	-
Chloroethanol	TR	+	+	+	0
Chloroform	TR	-	-	-	-
Chloromethane	TR	-	-	-	-
Chloromethyl, gaseous	TR	0	-	-	-
Chloroparaffin	100	+	0	-	-
Chloropicrin		0		+	-
Chlorosulphonic acid	TR	-	-	-	-
Chrome alum	All	+	+	+	+
Chrome anode slime		+	+	+	+
Chromic acid	20	+	+	0	0

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Chromic acid	50	+	0	-	0
Chromic acid/sulphuric acid	15/35	-	-	-	-
Chromic sulphuric acid	TR	-	-	-	-
Chromic sulphuric acid	All	-	-	-	-
Chromium salt	All	+	+	+	+
Chromium trioxide	50	+	0	-	0
Cider	H	+	+	+	+
Citraconic acid	All	+	+	+	
Citrate (citric acid salts)	All	+	+	+	+
Citric acid	10	+	+	+	+
Citric acid	All	+	+	+	+
Citron aldehyde	TR	+		0	0
Citrus juice		+	+	+	+
Citrus juices		+	+	+	+
Clophene (polychlorinated biphenyl PCB)	100	+	0	-	-
Clove oil			+	0	0
Coal gas, benzene-free	H	+			-
Coca Cola		+			+
Cocoa	G	+	+	+	+
Coconut oil	TR	+	+	0	-
Coconut oil alcohol	TR	+	0	0	0
Cod liver		+		0	0
Coffee	G	+	+	+	+
Cognac		+	+	+	+
Cola concentrates		+	+	+	+
Colouring		+	+	+	0
Compressed air, oleiferous		+	+		-
Cooking oil, vegetable and animal		+	+	+	0
Copper chloride	GL	+	+	+	+
Copper cyanide	All	+	+	+	+
Copper fluoride		+	+	+	+
Copper nitrate	30	+	+	+	+
Copper nitrate	GL	+	+	+	+
Copper sulphate	All	+	+	+	+
Corn oil	TR	+	+	0	-
Corsolin (disinfectant; chlorophenol soap solution)	VL	+	+	+	
Coumarone resin		+	+	+	+
Creosote		+	+	+	0
Creosote		+		0	0
Cresol	90	+	+	0	-
Cresol	100	+	+	0	-
Crotonic aldehyde	TR	+		0	+
Crude oil		+		0	-
Cuprous salt	GL	+	+	+	+
Cyclanone	H	+	+	+	+
Cyclanone (fatty alcohol sulphate)	L	+	+	+	+
Cyclohexane	TR	+	+	+	-

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Cyclohexanone	TR	+	0	0	-
Decahydronaphthalene (decaline)	TR	0	0	-	-
Defoamers		+		0	+
Detergents		+	+	+	+
Developer solutions (photography)		+	+	+	0
Dextrin	18	+	+	+	+
Dextrose (grape sugar, glucose)	All	+	+	+	+
Di-2-ethylhexylphthalate (DOP)		0			0
Dibutyl ether	TR	+	0	-	0
Dibutyl phthalate	TR	+	0	0	0
Dibutyl sebacate	TR	+		0	0
Dichloroacetic acid	50	+	+	+	0
Dichloroacetic acid	TR	+	+	0	0
Dichloroacetic methyl ester	TR	+	+	+	0
Dichlorobenzene	TR	0		-	-
Dichlorodiphenyltrichloroethane (DDT, powder)		+	+	+	+
Dichloroethane (ethylenchloride)		0	-	-	0
Dichloroethylene	TR	-	-	-	-
Dichloropropane		0		-	-
Dielectric (transformer oil)	100	0	0		-
Diesel fuel	H	0	0	0	-
Diethyl ketone		+		0	-
Diethylene glycol		+	+	+	+
Diethylether (ether, ethyl ether)	TR	0	0	0	-
Diglycolic acid 30 %	30	+	+	+	+
Diglycolic acid saturated	GL	+			+
Dihexyl phthalate	TR	+		0	-
Diisobutyl ketone	TR	+		-	-
Diisopropyl ether		0	0	-	-
Dimethyl sulfoxide		+	+	+	+
Dimethylamine	TR	+	0	0	+
Dimethylformamide	TR	+	+	0	0
Dinonyl phthalate	TR	0			0
Diocetyl phthalate	TR	0			0
Dioxane	TR	+	+	+	0
Diphenylamine		+		0	
Diphenyloxide		+		0	-
Disodium phosphate		+	+	+	+
Disodium sulphate		+	+	+	+
Disodium tetraborate (borax)	All	+	+	+	+
Dispersions		+			
Dodecyl benzene sulphonic acid		+		0	+
Dripping		+	+	+	0
Electrolyte baths for electroplating		0		0	-
Emulsifiers		+	+	+	+
Emulsifiers (tensides)	All	+	+	+	+
Emulsions (photographic)	H	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Engine oil (HD oil)		+		0	-
Epichlorohydrin		+	+	+	0
Essential oils		-	-	-	-
Ester, aliphatic	TR	+		0	0
Ethane		+	+	+	-
Ethanol (rectified spirit, ethyl alcohol, alcohol)	96	+	+	+	+
Ether (ethyl ether, diethyl ether)	TR	0	0	0	-
Ethyl acetate	100	+	0	-	0
Ethyl acetate	TR	+	0	0	0
Ethyl alcohol (ethanol, rectified spirit, alcohol)	96	+	+	+	+
Ethyl alcohol (fermentation slurry)	G	+		0	+
Ethyl alcohol, denatured (2 % toluol)	96	0			0
Ethyl alcohol+acetic acid (fermentation mix)		+	+	+	+
Ethyl bromide		0		-	0
Ethyl chloride (dichlorethane)		0	0	0	0
Ethyl chloroacetate	TR	+	+	+	-
Ethylbenzene	TR	0			-
Ethylchloride	TR	0			0
Ethylene		+		0	-
Ethylene glycol	TR	+	+	+	+
Ethylene oxide (oxirane), gaseous	TR	+	+	+	0
Ethylene oxide (oxirane), liquid	TR	-	-	-	0
Ethylenediamine	TR	+	+	+	+
Ethylenediamine-tetra acetic acid		+	+	+	+
Ethylether (ether, diethyl ether)	TR	0	0	0	-
Exhaust gases containing carbon dioxide	All	+	+	+	+
Exhaust gases containing carbon monoxide	All	+	+	+	+
Exhaust gases containing hydrochloric acid	All	+	+	+	+
Exhaust gases containing hydrogen fluoride	S	+	+	+	+
Exhaust gases containing oleum	S	-	-	-	-
Exhaust gases containing oleum	≤ 5	-	-	-	-
Exhaust gases containing sulphur dioxide	All	+	+	+	+
Exhaust gases containing sulphur trioxide (oleum)	S	-	-	-	0
Exhaust gases containing sulphuric acid	All	+	+	+	+
Exhaust gases containing sulphuric acid, damp	All	+	+	+	0
Exhaust gases, nitrous (nitric oxide)	S	+	+	+	+
Exhaust gases, nitrous (nitric oxide)	≤ 5	+	+	+	+
Exhaust gases, nitrous (nitric oxide)	> 5			-	+
Exsiccator fat		+		0	0
Fatty acid amides		+		0	0
Fatty acids	TR	+	+	0	-
Fatty acids, techn. pure	100	+	0		-
Fatty alcohol sulphate	H	+	+	+	+
Fatty alcohol sulphate (cyclanone)	L	+	+	+	+
Fatty alcohols		+		0	0
Fermentation compound (ethyl alcohol + acetic acid)	G	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Fermentation slurry (ethyl alcohol)	G	+		0	+
Ferric chloride	All	+	+	+	+
Fixing salt (sodium thiosulphate)	All	+	+	+	+
Floor wax		+		0	-
Fluorine	TR	-	-	-	-
Fluoroboric acid		+		0	0
Fluorosilicic acid	40	+	+	+	+
Fluorosilicic acid	32	+	+	+	0
Formaldehyde (FORMALIN)	40	+	+	+	+
Formalin (aqueous formaldehyde)	40	+	+	+	+
Formamide	TR	+	+	+	+
Formic acid	10	+	+	+	+
Formic acid	50	+	+	+	+
Formic acid	85	+	+	+	0
Formic acid	TR	+	+	+	0
Frigen 12 (Freon 12)	100	0		-	0
Fruit juices	G	+	+	+	+
Fruit juices, fermented		+	+	+	+
Fruit juices, unfermented		+	+	+	+
Fruit pulp	H	+	+	+	+
Fruit wine	H	+	+	+	+
Furfurol		+		0	0
Furfuryl alcohol	TR	+	+	+	0
Furniture polish		+		0	-
Gelatine	All	+	+	+	+
Gin	40	+			+
Glucose (grape sugar, dextrose)	All	+	+	+	+
Glue		+	+	+	+
Glycerine	All	+	+	+	+
Glycerine chlorohydrin		+	+	+	0
Glycine	VL	+	+	+	+
Glycol	H	+	+	+	+
Glycolic acid	37	+	+	+	+
Glycolic acid	70	+	+	+	+
Glycolic acid butyl ester		+	+	+	0
Glysantine		+	+	+	+
Grape sugar (glucose, dextrose)	All	+	+	+	+
Gravy		+	+	+	+
Gypsum (calcium sulphate)	GL	+	+	+	+
Hair shampoo		+	+	+	+
Halothane		0		-	-
Heating oil	H	0	-	-	-
Heptane	TR	+	0	0	-
Hexadecanol (cetyl alcohol)		+	+	+	0
Hexafluorosilic acid	All	+	+	+	0
Hexahydrophenol	TR	+	+	+	-
Hexamethylenetetramine	All	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Hexane	TR	+	0	0	-
Hexanetriol	TR	+	+	+	+
Honey		+	+	0	+
Hydrazine hydrate	TR	+	+	+	+
Hydrazinium hydroxide	L	+	+	+	+
Hydrochloric acid	≤ 28	+	+	+	+
Hydrochloric acid	> 28	+	+	0	+
Hydrocyanic acid	TR	+	+	+	0
Hydrocyanic acid	TR	+	+	+	0
Hydrocyanic acid (hydrogen cyanide)	10	+	+	+	+
Hydrocyanic acid (prussic acid)	10	+	+	+	+
Hydrofluoric acid		+			-
Hydrofluoric acid	70	+		0	-
Hydrofluoric acid (fluorhydric acid)	50	+	+	0	-
Hydrogen	TR	+	+	+	+
Hydrogen bromide acid	50	+	+	+	+
Hydrogen bromide, gaseous	TR	+	+	+	+
Hydrogen chloride gas, damp and dry	TR	+	+	+	+
Hydrogen peroxide	10	+	+	+	0
Hydrogen peroxide	30	+	0	0	0
Hydrogen peroxide	90	+	0	-	0
Hydrogen peroxide	30	+	0	0	0
Hydrogen peroxide	90	+	0	-	0
Hydrogen sulphide		+	+	+	0
Hydrogen sulphide, gaseous	GL	+	+	0	0
Hydroquinone	L	+	+	+	0
Hydrosulfite	VL	+	+	+	+
Hydroxylamine sulphate	12	+	+	+	+
Hypochlorous acid		0	0	0	0
Hypochlorous acid		0	0	0	0
Hypophosphite (salt of hypophosphorous acid)	All	+	+	+	
Ink		+	+	+	+
Iodine tincture DAB6	H	+	+	0	0
Iodine-potassium iodide (3 % iodine)		+	+	0	0
i-propanol	TR	+	+	+	+
Iron (II) chloride	GL	+	+	+	+
Iron (II) sulphate	All	+	+	+	+
Iron (III) chloride	All	+	+	+	+
Iron (III) nitrate	L	+	+	+	+
Iron (III) sulphate	GL	+	+	+	+
Iron salt	All	+	+	+	+
Isobutyl alcohol		+	+	+	+
Iso-butyric aldehyde (technically pure)	100	+		-	0
Iso-octane	TR	+	0	0	-
Isopropanol (isopropyl alcohol)	TR	+	+	+	+
Isopropyl acetate	100	+		0	0
Isopropyl ether	TR	0		-	0

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Javelle water (sodium hypochlorite)	5	0	0	0	-
Jelly		+	+	+	+
Kaolin elutriated/ground	All	+	+	+	+
Kerosene (petroleum)	TR	0	0	0	-
Ketone		0	0	0	0
Lactic acid	All	+	+	+	0
Lactose		+	+	+	+
Lanolin (wool fat)	TR	0	0	0	0
Latex (rubber dispersions)		+	+	+	+
Lead (II) acetate	All	+	+	+	+
Lead tetraethyl	TR	+			0
Lemon aroma		+			0
Lemon juice		+	+	+	+
Lemon zest oil		+			-
Lemonades		+			+
Levoxin 15 (hydrazine hydrate)	TR	+	+	+	+
Lime water		+	+	+	+
Limescale (calcium carbonate)	GL	+	+	+	+
Linseed oil	TR	+	+	+	0
Lipoides (lecithins; emulsifiers)	All	+	+	+	
Liquid soap		+	+	+	+
Lithium bromide		+	+	+	+
Lubricating oils	H	0	0	0	-
Lysoform (disinfectant; aqueous solution div. higher aldehydes)	VL	+	+	0	
Lysol (cresol soap solution)		+		0	+
Machine oil (free from aromatic compounds)	TR	0		0	-
Magnesium carbonate	GL	+	+	+	+
Magnesium chloride	All	+	+	+	+
Magnesium fluosilicate		+	+	+	+
Magnesium hydroxide	GL	+	+	+	+
Magnesium iodide		+	+	+	+
Magnesium salts	All	+	+	+	+
Magnesium sulphate	All	+	+	+	+
Magnesium sulphate (Epsom salt)	All	+	+	+	+
Maleic acid	GL	+	+	+	0
Malic acid	1	+	+	+	+
Malic acid	50	+	+	+	+
Malic acid	GL	+	+	+	+
Manganese sulphate		+	+	+	+
Margarine		+	+	+	-
Marmelade	H	+	+	+	+
Mashed potatoes		+	+	+	+
Mayonnaise		+			0
Menthol	TR	+	+	0	-
Mercury	TR	+	+	+	+
Mercury chloride	TR	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Mercury salt	GL	+	+	+	+
Mersol D (compound of higher paraffin sulfonate acid chlorides)	100	-			
Metal soaps		+	+	+	+
Metallic mordants		+			+
Methacrylic acid		+	+	+	0
Methane, gaseous	TR	+			-
Methanol (methyl alcohol)	All	+	+	+	+
Methol (4-methylaminopheno sulphate) (photo developer)	VL	+			0
Methoxybutanol	TR	+	+	0	0
Methoxybutyl acetate (butoxyl)		+		0	0
Methyl acrylate		+	+	+	-
Methyl alcohol (methanol)	All	+	+	+	+
Methyl benzene (toluol)	TR	0	-	-	-
Methyl bromide, gaseous	TR	0	0	-	-
Methyl chloride	TR	0	-	-	-
Methyl chloroacetate	TR	+	+	+	-
Methyl ethyl ketone	TR	+	0	-	0
Methyl glycol		+	+	+	0
Methyl methacrylate		+	+	+	-
Methyl propyl ketone		+		0	0
Methyl salicylate		+		0	-
Methyl sulphuric acid	50	+	+	+	-
Methyl sulphuric acid	100	0			-
Methylacetate	TR	+	+		-
Methylamine	32	+			+
Methylcyclohexane		0		-	-
Methylene chloride	TR	0	0	-	-
Methylisobutylketone		+		-	0
Milk	H	+	+	+	0
Mineral water	H	+	+	+	+
Mixed acid I (sulphuric acid/nitric acid/water):					
- 48/49/3		-	-	-	-
- 50/50/0		-	-		-
- 10/87/3		-			-
- 50/31/19		-			-
- 50/33/17		-			-
- 10/20/70		0			0
Mixed acid II (sulphuric acid/phosphoric acid/water):					
- 30/60/10		+	0		0
Molasses		+	+	+	+
Mono ethylamine	All	+	+	+	+
Monochlorobenzene		0		-	-
Monochloroacetic ethylester	100	+	+	+	-
Monochloroacetic methylester	100	+	+	+	-
Morpholine	TR	+	+	+	0

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Mowilith dispersions		+	+	+	+
Nail polish		+		0	+
Nail polish remover		+		0	0
Naphta	H	0		0	-
Naphthalene	TR	0		0	-
Natural gas	H	+			-
Nekal BX (wetting agent; sodium salts div. isopropyl naphthalene sulphonic acids)	All	+	+	+	
Nickel chloride	GL	+	+	+	+
Nickel nitrate	GL	+	+	+	+
Nickel salts	GL	+	+	+	+
Nickel sulphate	All	+	+	+	+
Nicotine		+	+	+	-
Nicotinic acid	VL	+	+		+
Nitric acid	6.3	+	+	+	+
Nitric acid	25	+	+	+	+
Nitric acid	40	0	0	-	0
Nitric acid	50	0	0	-	0
Nitric acid	65	0	-	-	-
Nitric acid	75	-	-	-	-
Nitrobenzol	TR	+	+	0	-
Nitrocellulose		+			0
Nitrogen (gaseous)	All	+	+	+	+
Nitrotoluenes	TR	+	+	0	-
Nitrous gases	≤ 5	+	+	+	+
N-methylpyrrolidone		+	+	+	0
Nolan diluter		+	+		-
Nolan varnish		+	+		
Nonyl alcohol (Nonanol)		+	+	+	+
Nut oil		+		0	0
Nutrient salt	All	+	+	+	+
Octylcresol	TR	0		-	-
Oils, ethereal		0		-	-
Oils, mineral without additives		0		0	-
Oils, mineral, free from aromatic compounds	H	0	0	0	-
Oils, vegetable and animal	H	+	0	0	-
Oleic acids	TR	+		0	-
Olein (oleic acid)		+	-	0	-
Oleum vapours	TR	-	-	-	0
Oleum vapours (sulphur trioxide)	≤ 5	-			0
Oleum, 10 % SO ₃		-	-	-	-
Optical brighteners		+	+	+	+
Orange juice		+	+	+	+
Orange peel oil		+			-
Oxalic acid	GL	+	+	+	0
Oxygen	TR	+	+	0	+
Ozone	GL	0	-	-	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Ozone, gaseous 2 %		0	-	-	+
Ozone, gaseous 50 pphm		0		-	+
P 3 7221	VL	+	+		+
P 3 Galvaclean 20	VL	+	+		+
P 3 Galvaclean 42 = P 3 S	VL	+	+		+
P 3 Galvaclean 44	VL	+	+		+
P 3 Galvaclean 45	VL	+	+		+
P 3 Galvaclean 65	VL	+	+		+
P 3 Manuvo hand cleaner	VL	+	+		+
P 3 Saxim	VL	+	+		+
P 3 Standard	VL	+	+		+
Palm kernel fatty acid	TR	+		-	-
Palm kernel oil		+	+	0	0
Palm oil	H	+	+	0	0
Palmitic acid		+	+	+	-
Palmityl alcohol		+	+	+	0
Paraffin	100	+	+	+	-
Paraffin emulsion	H	+	+	0	0
Paraffin oil	TR	+	+	0	-
Paraformaldehyde		+	+	+	+
p-Butylphenol	TR	0			-
Pectin	GL	+	+	+	+
Pentanol	TR	+	+	+	+
Peppermint oil	TR	+			-
Perchlorethylene	TR	0	0	-	-
Perchloric acid	20	+	+	+	0
Perchloric acid	50	+		0	0
Perchloric acid	70	+	0	-	-
Perfume		+			-
Perhydrol (hydrogen peroxide, aqueous solution)	40	+	0	0	0
Pesticide	G	+	+	+	0
Petrolether	TR	+	0	0	-
Petroleum (kerosene)	TR	0	0	0	-
Petroleum (normal)	H	+	0	0	-
Petroleum ether (benzine, free from aromatic compounds)	100	+	0	0	-
Petroleum spirit (white spirit)	TR	0	0	0	-
Petroleum without additives		0		0	-
Petroleum, free from aromatic substances	H	0	0	0	-
Petroleum, unleaded and free from aromatic compounds	H	0	0	0	-
Petroleum-benzene compound	80/20	0		0	-
Phenol	All	+	+	+	-
Phenol (carbolic acid)	All	+	0	0	-
Phenolic resin moulding compound		+	+	+	0
Phenylamine (aniline)	GL	0	0	0	-
Phenylethyl alcohol		+	+	+	-
Phenylhydrazine	TR	0		-	-

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Phenylhydrazine hydrochloride		+		-	+
Phenylsulphonate (sodium dodecylbenzene sulphonate)		+	+	+	+
Phosgene, gaseous	TR	-	-	-	-
Phosgene, liquid	TR	-			-
Phosphate	All	+	+	+	+
Phosphoric acid	50	+	+	+	+
Phosphoric acid	85	+	+	0	+
Phosphoric pentoxide	100	+	+	+	+
Phosphoric trichloride	TR	+	+	0	+
Phosphorous oxychloride		+	+	0	+
Photo developer	H	+	+	+	0
Photo fixing bath	H	+	+		+
Photographic developer	H	+	+	+	+
Photographic emulsion	H	+	+	+	+
Phthalic acid	50	+	+	+	+
Phthalic acid	GL	+	+	+	+
Phthalic acid ester		+		0	0
Picric acid	10	+	+		0
Picric acid	GL	+	+		0
Pinda oil		+	+	+	-
Pine needle oil	H	+	0	0	-
Pine needle oil		+		0	-
Pineapple juice		+	+	+	+
Polychlorinated diphenyl (PCB)		+		-	-
Polyester resins		0		-	-
Polyester softener		+		0	0
Polyglycol		+	+	+	+
Potash (potassium carbonate)	All	+	+	+	+
Potassium aluminium sulphate (alum)	All	+	+	+	+
Potassium bichromate (potassium dichromate)	All	+	+	+	+
Potassium bisulphate	All	+	+	+	+
Potassium borate	10	+	+	+	+
Potassium borate	GL	+	+	+	+
Potassium bromate	VL	+	+	+	+
Potassium bromate	GL	+	+	0	+
Potassium bromide	All	+	+	+	+
Potassium cadmium cyanide	All	+	+	+	+
Potassium carbonate	All	+	+	+	+
Potassium carbonate (potash)	All	+	+	+	+
Potassium chlorate	All	+	+	+	+
Potassium chloride	All	+	+	+	+
Potassium chromate	40	+	+	+	+
Potassium chromate	GL	+	+	+	+
Potassium cyanide	All	+	+	+	+
Potassium dichromate (potassium bichromate)	All	+	+	+	+
Potassium ferricyanide	All	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Potassium ferrocyanide (yellow prussiate of potash)	All	+	+	+	+
Potassium fluoride	All	+	+	+	+
Potassium hydroxide (caustic potash)	50	+	+	+	+
Potassium iodide	All	+	+	+	+
Potassium nitrate	All	+	+	+	+
Potassium perborate		+	+	+	+
Potassium perchlorate	GL	+	+	+	+
Potassium permanganate	20	+	+	+	+
Potassium permanganate	GL	+	+	0	+
Potassium persulphate	All	+	+	+	+
Potassium phosphate	All	+	+	+	+
Potassium sulphate	All	+	+	+	+
Potassium sulphite	L	+	+	+	+
Potassium sulphite		+	+	+	+
Potassium tetracyanocuprate		+	+	+	+
Potassium thiosulphate		+	+	+	+
Propane, gaseous	TR	+	+	+	-
Propane, liquid	TR	+	+		-
Propargyl alcohol	7	+	+	+	+
Propionic acid	50	+	+	+	0
Propionic acid	TR	+	0	0	0
Propylene chloride	100	-			-
Propylene glycol	TR	+	+	+	+
Propylene oxide	TR	+	+	+	-
Prussiate of potash (yellow and red)	All	+	+	+	+
Pseudocumol		0		0	-
Pure acetic acid	TR	+	0	0	-
Pyridin	TR	+	0	0	-
Quinine		+	+	+	+
Rectified spirit (ethanol, ethyl alcohol, alcohol)	96	+	+	+	+
Red prussiate of potash	All	+	+	+	+
Roaster gases, dry	All	+	+	+	+
Rubber dispersions (latex)		+	+	+	+
Rum	40	+	+	+	+
Saccharic acid	GL	+			+
Salicylic acid	GL	+	+	+	+
Salicylic acid methyl ester (methyl salicylate)		+		0	-
Salt (sodium chloride)	All	+	+	+	+
Saturated vapour concentration		+	+	+	+
Scented oils		0		-	-
Sea water	H	+	+	+	+
Sea water (Salt water)	H	+	+	+	+
Sebum	TR	+	+	0	-
Shoe polish		+		0	-
Silicic acid	All	+	+	+	+
Silicone oil	TR	+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Silver nitrate	All	+	+	+	+
Silver salts	GL	+	+	+	+
Slurry		+	+	+	+
Soap solution	All	+	+	+	+
Soda (sodium carbonate)	All	+	+	+	+
Soda water (carbonic acid)	All	+	+	+	+
Sodium acetate	All	+	+	+	+
Sodium aluminium sulphate		+	+	+	+
Sodium benzoate	36	+	+	+	+
Sodium benzoate (benzoic acid sodium)	GL	+	+	+	+
Sodium bisulphite (sodium hydrogen sulphate)	GL	+	+	+	+
Sodium borate		+	+	+	+
Sodium bromate	L	+	0		+
Sodium bromide	L	+	+	+	+
Sodium carbonate (soda)	All	+	+	+	+
Sodium carbonate (sodium hydrogen carbonate)	GL	+	+	+	+
Sodium chlorate	All	+	+	+	+
Sodium chloride (salt)	All	+	+	+	+
Sodium chlorite	VL	+			0
Sodium chlorite	20	+	0	-	0
Sodium chlorite bleach	H	0		-	-
Sodium chromate	VL	+			+
Sodium copper cyanide	All	+	+		+
Sodium cyanide	GL	+	+	+	+
Sodium dichromate	GL	+	+	+	+
Sodium disulphite (sodium bisulphite)	All	+	+	+	+
Sodium dithionite	VL	+	+	+	+
Sodium dodecyl benzene sulphonate (phenylsulphonate)		+	+	+	+
Sodium ferricyanide	GL	+	+	+	+
Sodium fluoride	GL	+	+	+	+
Sodium hydrogen carbonate (sodium bicarbonate)	GL	+	+	+	+
Sodium hydrogen sulphate (sodium bisulphate)	10	+	+	+	+
Sodium hydrogen sulphate (sodium bisulphate)	All	+	+	+	+
Sodium hydroxide (caustic soda)	All	+	+	+	+
Sodium hypochlorite	12.5	0	-	-	-
Sodium hypochlorite (javel water)	5	+	0	0	0
Sodium hypochlorite solution with 12.5 % active chlorine		0	-	-	-
Sodium iodide	L	+			+
Sodium iron cyanide		+	+	+	+
Sodium nitrate	All	+	+	+	+
Sodium nitrite	All	+	+	+	+
Sodium oxalate	GL	+			+
Sodium perborate	All	+		0	+
Sodium perchlorate		+	+	+	+
Sodium peroxide	10	+	+	+	0

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Sodium peroxide	GL	0			0
Sodium peroxodisulphate (sodium persulphate)	GL	+	+	+	+
Sodium phosphate	GL	+	+	+	+
Sodium silicate (soluble glass)	All	+	+	+	+
Sodium sulphate	All	+	+	+	+
Sodium sulphate (Glauber salt)	All	+	+	+	+
Sodium sulphide	All	+	+	+	+
Sodium sulphite	GL	+	+	+	+
Sodium thiosulphate (fixing salt)	All	+	+	+	+
Soft soap		+	+	+	+
Soluble glass (sodium silicate)	All	+	+	+	+
Soya oil		+	+	+	0
Spermaceti		+		0	-
Spindle oil	TR	0	0	0	-
Spirit of wine (ethyl alcohol, ethanol, rectified spirit)	96	+	+	+	+
Spirits	H	+		+	+
Stain removal		0	0	0	-
Starch	All	+	+	+	+
Starch syrup	All	+	+	+	+
Stearic acid	TR	+	+	0	+
Styrol		0		-	-
Sublimed sulphur (elementary sulphur in powder form)	TR	+	+	+	+
Succinic acid	All	+	+	+	+
Suet		+	+	0	0
Sugar solutions	All	+	+	+	+
Sugar syrup	H	+	+	+	+
Sulfuryl chloride	TR	-	-	-	0
Sulphate	All	+	+	+	+
Sulphur	TR	+	+	+	+
Sulphur dioxide, gaseous, dry and damp	TR	+	+	+	+
Sulphur dioxide, liquid	TR	0		0	+
Sulphur trioxide	TR	-	-	-	-
Sulphur trioxide (oleum vapours)	≤ 5	-			0
Sulphuric acid	10	+	+	+	+
Sulphuric acid	70	+	+	+	0
Sulphuric acid	90	0	0	-	-
Sulphurous acid	GL	+	+	+	0
Table salt, saturated (brine)	100	+	+	+	+
Tannic extract from cellulose	H	+	+	+	0
Tannic extract, vegetable	H	+			0
Tannin (Tannic acid)	10	+	+	+	0
Tannin	10	+	+	+	+
Tar		+		0	-
Tartaric acid	All	+	+	+	0
Tea	GL	+	+	+	+
Tetrabromoethane		-	-	-	-

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Tetrachloroethane	TR	-	-	-	-
Tetrachloroethylene	TR	0	0	-	-
Tetrahydrofuran	TR	-	-	-	-
Tetralin	TR	0	0	-	-
Thionyl chloride	TR	-	-	-	+
Thiophene	TR	0	0	-	-
Thiourea	All	+	+		+
Tin (II) chloride	All	+	+	+	0
Tiutol (hypochlorite) (chlorine bleaching, Javelle water)	12.5	0	-	-	-
Toluene		+		0	-
Toluol (methylbenzene)	TR	0	-	-	-
Tomato juice		+	+	+	+
Transformer oil	TR	0		0	-
Treacle	H	+	+	+	0
Treacle	All	+	+	+	+
Tri-2-chloroethyl phosphate		+	+	+	-
Tributyl phosphate	TR	+	+	+	+
Trichloroacetic acid	50	+	+	+	0
Trichloroacetic acid	TR	+	0	-	0
Trichlorobenzene		-	-	-	-
Trichloroethane	TR	0			-
Trichloroethane, gaseous	100	0	-	-	-
Trichloroethylene	TR	0	-	-	-
Trichlorofluorethane (Frigen 11, Sdp. 24 °C)	100	0	-		-
Tricresylphosphate	TR	+	+	+	0
Triethylene glycol		+	+	+	+
Trilon		+	+	+	+
Trimethylborate		+		-	0
Trimethylolpropane		+	+	+	+
Trioctyl phosphate	TR	+	+	0	0
Trisodium phosphate		+	+	+	+
Turpentine oil	TR	0	0	0	-
Two-stroke oil		0		0	-
Typewriter oil		+	+	0	-
Universal dilution		0	0		-
Urea nitrate	33	+	+	+	+
Uric acid	GL	+	+	+	+
Urine		+	+	+	+
Vaseline oil	TR	0	0	0	-
Vinegar (wine vinegar)	H	+	+	+	0
Vinyl acetate	TR	+	+	0	-
Viscose spinning solutions		+	+	+	-
Vitamin C (ascorbic acid)		+	+	+	+
Walnut oil		+		0	0
Washing detergent	G	+	+	+	+
Washing-up liquid		+	+	+	+

Flow substance	Share %	Geberit HDPE Behaviour at			EPDM seal Behaviour at 20 °C
		20 °C	40 °C	60 °C	
Washing-up liquid	H	+	+	+	+
Water, chlorinated drinking water		+	+	+	+
Water, de-ionised		+	+	+	+
Water, demineralised		+	+	+	+
Water, distilled		+	+	+	+
Water, ozonised drinking water		+			+
Wax		+		0	0
Wax alcohols	TR	0	0	-	0
Wetting agent	5	+			+
Whey		+	+	+	+
Whisky	H	+			+
White spirit	TR	0	0	0	-
Wine	H	+	+	+	+
Wine vinegar (vinegar)	H	+	+	+	0
Wood stain	G	+		0	0
Wool fat (lanolin)	TR	0	0	0	0
Xylol (mixed isomers)	TR	-	-	-	-
Yeast	All	+	+	+	+
Yeast wort (aqueous solution of maltose and dextrines)	L	+	+	+	+
Zapon dilution		0	0		-
Zinc carbonate	GL	+	+	+	+
Zinc chloride	All	+	+	+	+
Zinc dust	All	+	+	+	+
Zinc oxide	GL	+	+	+	+
Zinc salts	All	+	+	+	+
Zinc sludge		+	+	+	+
Zinc stearate		+	+	+	+
Zinc sulphate	All	+	+	+	+

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