



Chemical resistance of high and low density polyethylene

Based on an evaluation carried out on pipes and fittings
(Reference: technical report ISO/TR 7474: 1981)

Introduction

The table in this document summarizes data, obtained from both practical experience and laboratory test results, on the chemical resistance performance of both high and low density polyethylene. The evaluation is based on values obtained by immersion of the polyethylene test specimens in the relevant fluid at 20°C and 60°C (and atmospheric pressure) followed by the determination of tensile characteristics.

A "standardized" classification has been adopted in many countries which is explained below.

Standardization Utilization

This document suggests a preliminary classification for the chemical resistance of high and low density polyethylene.

It should be used only as a general guideline on the possible use of these substances in contact with the polyethylene, based on

- a) Temperatures of 20°C and 60°C
- b) The absence of internal pressure and external mechanical stress
- c) Good part manufacturing principles and procedures

Definitions

The following symbols and abbreviations have been used in this document:

S	=	satisfactory
L	=	limited
NS	=	not satisfactory

Sat. Sol.	=	saturated aqueous Solution, prepared at 20°C
Sol.	=	aqueous Solution at a concentration higher than 10%, but not saturated
Dil. Sol.	=	Dilute aqueous solution at a concentration equal to, or lower than, 10%
Work Sol.	=	aqueous Solution having the usual concentration for industrial use

Where Solution concentrations are given in the table, they are expressed as a percentage by mass.



Polyethylene Packaging Information

As explained, this document is only a guideline. The packaging of substances within polyethylene is actually dependent on many factors.

For example:

- a) Chemical resistance of polyethylene
- b) Permeation rate of the substance through polyethylene
- c) Stress cracking nature of the substance
- d) Effect of oxidation on the substance
- e) Change in internal pressure due to the generation of gases from the substance, especially at higher temperatures
- f) Container size, design, shape and wall thickness.

Polyethylene is basically an inert plastic and is not subject to attack by most chemicals. However, those substances that do attack the polyethylene, may still be "package able" under certain conditions.

In general terms, high density polyethylene is more chemical resistant than low density.



**CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED
TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C**

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
acetaldehyde	100%	L	NS	S	L
acetanilide				S	S
acetic acid	10%	S	S	S	S
acetic acid	60%	S	L	S	S
acetic acid, glacial	> 96 %	L	NS	S	L
acetic anhydride	100%	L	NS	S	L
acetone	100%	L	NS	L	L
acrylonitrile		S	S	S	S
acetylsilicic acid		S	S	S	S
adipic acid	Sat. Sol.	S	S	S	S
after shave		NS	NS	NS	NS
aliphatic hydrocarbons		L	NS	L	L
allyl acetate		S	L	S	L
allyl alcohol	100%	L	NS		
allyl alcohol	96%			S	S
allyl alcohol	100%	L	NS		
allyl chloride		L	NS	L	NS
aluminium chloride	Sat. Sol.	S	S	S	S
aluminium fluoride	Sat. Sol.	S	S	S	S
aluminium hydroxide	Sat. Sol.	S	S	S	S
aluminium nitrate	Sat. Sol.	S	S	S	S
aluminium oxychloride	Sat. Sol.	S	S	S	S
al/potassium sulphate	Sat. Sol.	S	S	S	S
aluminium sulphate	Sat. Sol.	S	S	S	S
alums	Sol.	S	S	S	S
aminobenzoic acid		S	S	S	S
ammonia, dry gas	100%	S	S	S	S
ammonia, liquid	100%	L	L	S	S
ammonia, aqueous	Dil. Sol.	S	S	S	S
ammonium acetate		S	S	S	S
ammonium carbonate	Sat. Sol.	S	S	S	S
ammonium chloride	Sat. Sol.	S	S	S	S
ammonium fluoride	Sol.	S	S	S	S
ammonium hexafluoro silicate	Sat. Sol.	S	S	S	S
ammonium hydrogen carbonate	Sat. Sol.	S	S	S	S
ammonium hydroxide	10%	S	S	S	S
ammonium hydroxide	30%	S	S	S	S
ammonium metaphosphate	Sat. Sol.	S	S	S	S
ammonium nitrate	Sat. Sol.	S	S	S	S
ammonium oxalate	Sat. Sol.	S	S	S	S
ammonium phosphate	Sat. Sol.	S	S	S	S
ammonium persulphate	Sat. Sol.	S	S	S	S
ammonium sulphate	Sat. Sol.	S	S	S	S
ammonium sulphide	Sat. Sol.	S	S	S	S
ammonium thiocyanate	Sat. Sol.	S	S	S	S
amyl acetate	100%	NS	NS	L	L
amyl alcohol	100%	L	L	S	L
amyl chloride	100%	NS	NS		
amyl phthalate		L	L	S	L



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
aniline	100%	NS	NS	S	L
anilinchlorohydrate		L			
antimony III chloride	90%			S	S
antimony III chloride	Sat. Sol.	S	S	S	S
antimony trichloride	Sol.	S	S	S	S
apple juice	Sol.			S	L
aqua regia	(HC1/HN03=3/1)	NS	NS	NS	NS
aromatic hydrocarbons		NS	NS	NS	NS
arsenic acid	Sat. Sol.	S	S	S	S
asorbic acid	10%	S	S	S	S
barium bromide	Sat. Sol.	S	S	S	S
barium carbonate	Sat. Sol.	S	S	S	S
barium chloride	Sat. Sol.	S	S	S	S
barium hydroxide	Sat. Sol.	S	S	S	S
barium sulphate	Sat. Sol.	S	S	S	S
barium sulphide	Sat. Sol.	S	S	S	S
beer		S	S	S	S
benzaldehyde	100%	L	NS	S	L
benzene	100%	NS	NS	L	L
benzoic acid	Sat. Sol.	S	S	S	S
benzoylchloride		S	L	S	L
benzyl alcohol		S	L	S	S
benzylsulphonic acid	10%	S	S	S	S
bismuth carbonate	Sat. Sol.	S	S	S	S
bitumen		S	L	S	S
bleach lye	10%	S	S	S	S
borax	Sat. Sol.	S	S	S	S
boric acid	Sat. Sol.	S	S	S	S
boron trifluoride		S	S	S	S
brake fluid		L	NS	L	NS
brine		S	S	S	S
bromine, dry gas	100%	NS	NS	NS	NS
bromine, liquid	100%	NS	NS	NS	NS
bromoform	100%	NS	NS	NS	NS
butandiol	10%	S	S	S	S
butandiol	60%	S	S	S	S
butandiol	100%	S	S	S	S
butane, gas	100%			S	S
butanol	100%	S	L	S	S
butter		S	S	S	S
butyl acetate	100%	S	L	S	L
butyl alcohol	100%	S	S	S	S
butyl chloride		S		S	
butylene glycol	10%	S	S	S	S
butylene glycol	60%	S	S	S	S
butylene glycol	100%	S	S	S	S
butyraldehyde				S	L
butyric acid	100%	L	L	S	L
calcium arsenate		S	S	S	S
calcium benzoate		S	S	S	S
calcium bisulphide		S	S	S	S
calcium bromate	10%	S	S	S	S



**CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED
TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C**

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
calcium bromide	Sat. Sol.	S	S	S	S
calcium carbonate	Sat. Sol.	S	S	S	S
calcium chlorate	Sat. Sol.	S	S	S	S
calcium chloride	Sat. Sol.	S	S	S	S
calcium chromate	40%	S	S	S	S
calcium cyanide		S	S	S	S
calcium hydrosulphide	Sol.	S	S	S	S
calcium hydroxide	Sat. Sol.	S	S	S	S
calcium hypochloride	Sol.	S	S	S	S
calcium nitrate	Sat. Sol.	S	S	S	S
calcium oxide	Sat. Sol.	S	S	S	S
calcium perchlorate	1%	S		S	S
calcium permanganate	20%	S	S	S	S
calcium persulphate	Sol.	S	S	S	S
calcium sulphate	Sat. Sol.	S	S	S	S
calcium sulphide	Dil. Sol.			L	L
camphor oil		NS	NS	L	L
carbon dioxide, dry gas	100%			S	S
carbon dioxide, wet		S	S	S	S
carbon disulphide	100%	NS	NS	L	NS
carbonic acid		S	S	S	S
carbon monoxide	100%	S	S	S	S
carbon tetrachloride	100%	NS	NS	L	NS
Castor oil	conc	S	S	S	S
chlorine, dry gas	100%	NS	NS	L	NS
chlorine water	2% Sat. Sol.	L	L	S	S
chlorine, aqueous	Sat. Sol.	NS	NS	L	NS
chloroacetic acid	Sol.			S	S
chlorobenzene	100%	NS	NS	NS	NS
chloroethanol	100%	S	S	S	S
chloroform	100%	NS	NS	NS	NS
chlorometane, gas	100%	L		L	
chloropropene		NS		L	
chlorosulphonic acid	100%	NS	NS	NS	NS
chlorotoluene		NS	NS	NS	NS
chrome alum	Sol.	S	S	S	S
chromic acid	Sat. Sol.	S	S	S	S
chromic acid	20%			S	L
chromic acid	50%			S	L
chromium VI oxide	Sat. Sol.	S	S	S	S
Cider		S	S	S	S
citric acid	Sat. Sol.	S	S	S	S
citric acid	10%	S	S	S	S
citric acid	25%	S	S	S	S
coconut oil, alcoholic		S	S	S	S
coffee		S	S	S	S
copper II chloride	Sat. Sol.	S	S	S	S
copper II cyanide	Sat. Sol.	S	S	S	S
copper II fluoride	2%	S	S	S	S
copper II fluoride	Sat. Sol.	S	S	S	S
copper II nitrate	Sat. Sol.	S	S	S	S
copper II sulphate	Sat. Sol.	S	S	S	S



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
corn oil		S	S	S	S
cottonseed oil		S	S	S	S
cresylic acid	Sat. Sol.			L	
crotonaldehyde	Sat. Sol.	L			
cyclanone		S	S	S	S
cyclohexane		NS	NS	NS	NS
cyclohexanol	Sat. Sol.	L	NS		
cyclohexanol	100%			S	S
cyclohexanone	100%	NS	NS	S	L
decahydronaphthalene	100%	L	NS	S	L
decane		NS	NS	L	NS
decalin	100%			S	L
detergents, synthetic		S	S	S	S
developers, photographic	Work sol.			S	S
dextrin	Sol.	S	S	S	S
dextose	Sol.	S	S	S	S
diacetone alcohol		L	L	L	L
diazo salts		S	S	S	S
dibutyl amine		NS	NS	L	NS
dibutyl ether		NS	NS	L	
dibutylphthalate		L	L	S	L
dichlorobenzene		NS	NS	NS	NS
dichloroethylene		NS	NS	NS	NS
dichloropropylene		NS	NS	NS	NS
diesel oil		S	NS	S	L
diethyl ether	100%	NS	NS	L	
diethyl ketone		L	NS	L	L
diethylene glycol		S	S	S	S
diglycolic acid		S	S	S	S
diisobutylketone	100%	S	L	S	L
dimethyl amine	100%	NS	NS		
dimethylformamid		S	L	S	S
dioctyl phthalate	100%	L	NS	S	L
dioxan	100%			S	S
dipentene		NS	NS	NS	NS
disodium phosphate		S	S	S	S
Drano, plumbing cleaner		S	S	S	S
emulsions, photographic		S	S	S	S
ethandiol	100%	S	S	S	S
ethanol	40%	S	L	S	L
ethanol	96%	L	L		
ethyl acetate	100%	L	NS	L	NS
ethyl acrylate	100%	NS	NS	L	NS
ethyl alcohol	35%	S	S	S	S
ethyl alcohol	100%	S	S	S	S
ethyl benzene		NS	NS	NS	NS
ethyl chloride	100%	NS	NS	NS	NS
ethylene chloride	100%	NS	NS	NS	NS
ethylene diamine	100%	S	L	S	S
ethyl ether		NS	NS	NS	NS
ethylene glycol	100%	S	S	S	S
ethyl mercaptan		NS	NS	NS	NS



**CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED
TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C**

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
ferric chloride	Sat. Sol.	S	S	S	S
ferric nitrate	Sat. Sol.	S	S	S	S
ferric sulphate	Sat. Sol.	S	S	S	S
ferrous chloride	Sat. Sol.	S	S	S	S
ferrous sulphate	Sat. Sol.	S	S	S	S
fish Sol.ubles	Sol.	S	S	S	S
fluoroboric acid		S	S	S	S
fluorine gas	100%	L	NS	NS	NS
fluorine gas, dry	100%	NS	NS	NS	NS
fluorine gas, wet	100%	NS	NS	NS	NS
fluorosilicic acid	40%	S	S	S	S
fluorosilicic acid	conc	S	L	S	L
formaldehyde	40%	S	S	S	S
formic acid	40%	S	S	S	S
formic acid	98 to 100 %	S	S	S	S
fructose sat	Sol.	S	S	S	S
fruit pulp	Sol.	S	S	S	S
furfural	100%	NS	NS	NS	NS
furfuryl alcohol	100%	L	NS	S	L
gallic acid sat	Sol.	S	S	S	S
gasoline, petrol		L	NS	L	L
gelatine		S	S	S	S
glucose	Sat. Sol.	S	S	S	S
glycerine	100%	S	S	S	S
glycerol	100%	S	S	S	S
glycolic acid	30%	S	L		
glycolic acid	Sol.			S	S
n-heptane	100%	NS	NS	L	NS
hexachlorobenzene		NS	NS	S	L
hexachlorophene		NS	NS	L	L
hexamethylenetriamine	40%	S		S	
hexane		S	L	S	L
hexanol, tertiary		S	S	S	S
hydrobromic acid	50%	S	S	S	S
hydrobromic acid	up to 100 %	S	S	S	S
hydrochloric acid	up to 36 %	S	S	S	S
hydrochloric acid	conc	S	S	S	S
hydrochlorous acid	conc	S	S	S	S
hydrocyanic acid	10%	S	S	S	S
hydrocyanic acid	Sat. Sol.	S	S	S	S
hydrofluoric acid	40%	S	S	S	S
hydrofluoric acid	60%	S	L	S	L
hydrogen	100%	S	S	S	S
hydrogen chloride, dry gas		S	S	S	S
hydrogen peroxide	30%	S	L	S	S
hydrogen peroxide	90%	S	NS	S	NS
hydrogen sulphide, gas	100%	S	S	S	S
hydroquinone	Sat. Sol.	S	S	S	S
hydroxylamine	up to 12 %	S	S	S	S
inks		S	S	S	S
iodine, in potassium	Sol.	L	NS	NS	NS
iodine, in alcohol		NS	NS	NS	NS



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
iron II chloride	Sat. Sol.	S	S	S	S
iron II sulphate	Sat. Sol.	S	S	S	S
iron III chloride	Sat. Sol.	S	S	S	S
iron III nitrate	Sol.	S	S	S	S
iron III sulphate	Sat. Sol.	S	S	S	S
iso octane	100%	S	NS	S	L
iso pentane		NS	NS	NS	NS
isopropanol		S	S	S	S
iso propyl amine		NS	NS	NS	NS
isopropyl ether	100%	L	NS	S	NS
kerosene		NS	NS	NS	NS
lactic acid	10%	S	S	S	S
lactic acid	28%	S	S	S	S
lactic acid	up to 100 %	S	S	S	S
latex		S	S	S	S
lead acetate	Dil. Sol.	S	S	S	S
lead acetate	Sat. Sol.	S	S	S	S
lead arsenate		S	S	S	S
lubricating oil		S	S	S	S
lySol.		NS	NS	L	NS
magnesium carbonate	Sat. Sol.	S	S	S	S
magnesium chloride	Sat. Sol.	S	S	S	S
magnesium hydroxide	Sat. Sol.	S	S	S	S
magnesium nitrate	Sat. Sol.	S	S	S	S
magnesium sulphate	Sat. Sol.	S	S	S	S
maleic acid	Sat. Sol.	S	S	S	S
mercury		S	S	S	S
mercury I nitrate	Sol.	S	S	S	S
mercury II chloride	Sat. Sol.	S	S	S	S
mercury II cyanide	Sat. Sol.	S	S	S	S
mercury	100%	S	S	S	S
methyl alcohol	100%	S	L	S	S
methanol	100%	S	L	S	S
methyl benzoic acid	Sat. Sol.	NS	NS	L	
methyl bromide	100%	NS	NS	NS	NS
methyl chloride	100%	NS	NS	NS	NS
methylcyclohexane		L	NS	L	NS
methyl ethyl ketone	100%			S	L
methylene chloride		NS	NS	NS	NS
methoxybutanol	100%	S	L	S	L
milk		S	S	S	S
milk of magnesia		S	L	S	L
mineral oils		L	NS	S	L
molasses	work conc	S	S	S	S
motor oil		S	L	S	S
naphtha		L	NS	L	NS
naphthalene		NS	NS	L	
nickel chloride	Sat. Sol.	S	S	S	S
nickel nitrate	Sat. Sol.	S	S	S	S
nickel sulphate	Sat. Sol.	S	S	S	
nicotine	Dil. Sol.	S	S	S	S
nicotinic acid	Dil. Sol.	L	L	S	



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
nitric acid	25%	S	S	S	S
nitric acid	50%	S	L	S	L
nitric acid	70%	S	L	S	L
nitric acid	95%	NS	NS	NS	NS
nitric acid	100%	NS	NS	NS	NS
nitrobenzene	100%	NS	NS	NS	NS
nitroethane	100%	S	NS	S	NS
nitromethane	100%	S		S	
nitrotoluene		NS	NS	NS	NS
n-octane		S	S	S	S
octyl alcohol		S	NS	S	NS
oils and fats		L	NS	S	L
oleic acid	100%	L	NS	S	S
oleum (H ₂ SO ₄ + 10% SO ₃)		NS	NS	NS	NS
oleum (H ₂ SO ₄ + 50% SO ₃)		NS	NS	NS	NS
olive oil		S	NS	S	NS
orthophosphoric acid	50%	S	S	S	S
orthophosphoric acid	95%	S	L	S	L
oxalic acid	Sat. Sol.	S	S	S	S
oxygen	100%	S		S	L
ozone	100%	NS	NS	L	NS
paraffin oil		S	L	S	S
n-pentane		NS	NS	NS	NS
pentane-2		NS	NS	NS	NS
perchloroethylene		NS	NS	NS	NS
perchloric acid	20%	S	S	S	S
perchloric acid	50%	S	L	S	L
perchloric acid	70%	S	NS	S	NS
phenol	Sol.	L	NS	S	S
phosphine	100%	S	S	S	S
phosphoric acid	up to 25 %	S	S	S	S
phosphoric acid	25 to 50 %	S	S	S	S
phosphoric III chloride	100%	S	L	S	L
phosphorous II chloride	100%			S	L
phosphorous pentoxide	100%	S	S	S	S
phosphorous trichloride	100%	S	L	S	L
photographic Sol.utions		S	S	S	S
phtalic acid	50%	S	S	S	S
picric acid	Sat. Sol.		S	L	S
plating Sol.utions		S	S	S	S
pluming cleaner, Drano		S	S	S	S
potassium acetate		S	S	S	S
potassium aluminium sulphate	Sat. Sol.	S	S	S	S
potassium benzoate		S	S	S	S
potassium bicarbonate	Sat. Sol.	S	S	S	S
potassium borate	Sat. Sol.	S	S	S	S
potassium bromate	Sat. Sol.	S	S	S	S
potassium bromide	Sat. Sol.	S	S	S	S
potassium carbonate	Sat. Sol.	S	S	S	S
potassium chlorate	Sat. Sol.	S	S	S	S
potassium chloride	Sat. Sol.	S	S	S	S
potassium chromate	Sat. Sol.	S	S	S	S



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
potassium cyanide	Sol.	S	S	S	S
potassium dichromate	Sat. Sol.	S	S	S	S
potassium fluoride	Sat. Sol.	S	S	S	S
potassium hexacyano					
- ferrate II	Sat. Sol.	S	S	S	S
- ferrate III	Sat. Sol.	S	S	S	S
potassium hexafluoro silicate	Sat. Sol.	S	S	S	S
potassium hydrogen carbonate	Sat. Sol.	S	S	S	S
potassium hydrogen sulphate	Sat. Sol.	S	S	S	S
potassium hydrogen sulphide	Sol.			S	S
potassium hydroxide	10%	S	S	S	S
potassium hydroxide	Sol.	S	S	S	S
potassium hypochlorite	Sol.	S	L	S	L
potassium iodate	10%	S	S	S	S
potassium iodide	Sat. Sol.	S	S	S	S
potassium nitrate	Sat. Sol.	S	S	S	S
potassium orthophosphate	Sat. Sol.	S	S	S	S
potassium oxalate	Sat. Sol.	S	S	S	S
potassium perchlorate	Sat. Sol.	S	S	S	S
potassium permanganate	20%	S	S	S	S
potassium persulphate	Sat. Sol.	S	S	S	S
potassium phosphate	Sat. Sol.	S	S	S	S
potassium sulphate	Sat. Sol.	S	S	S	S
potassium sulphide	Sol.	S	S	S	S
potassium sulphite	Sat. Sol.	S	S	S	S
potassium thiocyanate	Sat. Sol.	S	S	S	S
potassium thiosulphate	Sat. Sol.	S	S	S	S
propargyl alcohol		S	S	S	S
n-propyl alcohol		S	S	S	S
propionic acid	50%			S	S
propionic acid	100%			S	L
propylene dichloride	100%	NS	NS	NS	NS
propylene glycol		S	S	S	S
pyridine	100%			S	L
quinol	Sat. Sol.	S	S	S	S
resorcinol	Sat. Sol.	S	S	S	S
salicylic acid	Sat. Sol.	S	S	S	S
sea water		S	S	S	S
selenic acid		S	S	S	S
silicon oil		S	S	S	S
silver acetate	Sat. Sol.	S	S	S	S
silver cyanide	Sat. Sol.	S	S	S	S
silver nitrate	Sat. Sol.	S	S	S	S
soap Sol.ution	100%	S	S	S	S
sodium acetate	Sat. Sol.	S	S	S	S
sodium antimonate	Sat. Sol.	S	S	S	S
sodium arsenite	Sat. Sol.	S	S	S	S
sodium benzoate	Sat. Sol.	S	S	S	S
sodium bicarbonate	Sat. Sol.	S	S	S	S
sodium bisulphate	Sat. Sol.	S	S	S	S
sodium bisulphite	Sat. Sol.	S	S	S	S
sodium borate	Sat. Sol.	S	S	S	S



CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
sodium bromide	Sat. Sol.	S	S	S	S
sodium carbonate	Sat. Sol.	S	S	S	S
sodium chlorate	Sat. Sol.	S	S	S	S
sodium chloride	Sat. Sol.	S	S	S	S
sodium chlorite	Sat. Sol.	L			
sodium cyanide	Sat. Sol.	S	S	S	S
sodium dichromate	Sat. Sol.	S	S	S	S
sodium fluoride	Sat. Sol.	S	S	S	S
sodium hexacyano					
- ferrate II	Sat. Sol.			S	S
- ferrate III	Sat. Sol.			S	S
sodium hexafluoro silicate	Sat. Sol.	S	S	S	S
sod hydrogen carbonate	Sat. Sol.	S	S	S	S
sod hydrogen sulphate	Sat. Sol.	S	S	S	S
sod hydrogen sulphite	Sol.	S	S	S	S
sodium hydroxide	40%	S	S	S	S
sodium hydroxide	Sol.			S	S
sodium hypochloride		L	NS	S	S
sodium hypochlorite	15%			S	S
sodium hypochlorite	available C1			S	S
sodium iodate	10%	S	S	S	S
sodium iodide	Sat. Sol.	S	S	S	S
sodium nitrate	Sat. Sol.	S	S	S	S
sodium nitrite	Sat. Sol.	S	S	S	S
sodium orthophosphate	Sat. Sol.	S	S	S	S
sodium oxalate	Sat. Sol.	S	S	S	S
sodium phosphate	Sat. Sol.	S	S	S	S
sodium silicate	Sol.	S	S	S	S
sodium sulphate	Sat. Sol.	S	S	S	S
sodium sulphide	Sat. Sol.	S	S	S	S
sodium sulphite	Sat. Sol.	S	S	S	S
sodium thiocyanate	Sat. Sol.	S	S	S	S
stannic chloride	Sat. Sol.	S	S	S	S
stannous chloride	Sat. Sol.	S	S	S	S
starch Sol.ution	Sat. Sol.	S	S	S	S
stearic acid	Sat. Sol.	S	L	S	
styrene	Sol.	L	NS	L	NS
sulphur dioxide, dry	100%	S	S	S	S
sulphur trioxide	100%	NS	NS	NS	NS
sulphur acid	10 to 50 %	S	S	S	S
sulphuric acid	10%	S	S	S	S
sulphuric acid	50%	S	S	S	S
sulphuric acid	70%	S	L	S	L
sulphuric acid	80%	S	NS	S	NS
sulphuric acid	98%	L	NS	S	NS
sulphuric acid, fuming		NS	NS	NS	NS
sulphurous acid	30%	S	S	S	S
sulphurous acid	Sol.	S	S	S	S
tallow		S	L	S	L
tannic acid	Sol.	S	S	S	S
tartaric acid	Sat. Sol.	S	S	S	S

CHEMICAL RESISTANCE OF LOW AND HIGH DENSITY POLYETHYLENE, NOT SUBJECTED TO MECHANICAL STRESS, TO VARIOUS FLUIDS AT 20 AND 60°C

CHEMICAL OR PRODUCT	CONCENTRATION	LDPE		HDPE	
		20	60	20	60
tetrachloroethylene	100%	NS	NS	NS	NS
tetrachloromethane	100%	NS	NS	L	NS
tetradecane		NS	NS	NS	NS
tetrahydrofuran		NS	NS	NS	NS
tetrahydronaphthalene	100%	L	NS	S	L
thionyl chloride	100%	NS	NS	NS	NS
tin II chloride	Sat. Sol.	S	S	S	S
tin IV chloride	Sol.	S	S	S	S
tin IV chloride	Sat. Sol.			S	S
titanium tetrachloride	Sat. Sol.	NS	NS	NS	NS
toluene	100%	NS	NS	L	NS
tribromomethane		NS	NS	NS	NS
trichloroacetaldehyde		S		S	
trichlorobenzene		NS	NS		
trichloroethylene	100%	NS	NS	NS	NS
triethanolamine	100%	S		S	
triethanolamine	Sol.			S	L
triethylene glycol		S	S	S	S
trisodium phosphate	Sat. Sol.	S	S	S	S
turpentine		NS	NS	NS	NS
urea	up to 30 %	S	S	S	S
urea	Sol.	S	S	S	S
urine		S	S	S	S
vanilla extract		S	S	S	S
vaseline		S	L	S	S
vegetable oils		S	L	S	S
vinegar		S	S	S	S
water		S	S	S	S
wetting agents		S	S	S	S
wines and spirits		S	S	S	S
xylene	100%	NS	NS	L	NS
yeast	Sol.	S	S	S	S
zinc bromide	Sat. Sol.	S	S	S	S
zinc carbonate	Sat. Sol.			S	S
zinc chloride	Sat. Sol.	S	S	S	S
zinc nitrate	Sat. Sol.	S	S	S	S
zinc oxide	Sat. Sol.	S	S	S	S
zinc stearate	Sat. Sol.	S	S	S	S
zinc sulphate	Sat. Sol.	S	S	S	S
o-zylene		NS	NS	NS	NS
p-zylene		NS	NS	NS	NS