

Product Information Bulletin 1019

Chemical Resistance of Plasti-Fab EPS Products

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Plasti-Fab manufactures moulded expanded polystyrene (EPS) products, such as **GeoSpec** lightweight fill material and **PlastiSpan** insulation board. The resistance of Plasti-Fab EPS products to chemicals corresponds to that of parts made from the raw material it is made from, expandable polystyrene resins (EPR). The rigid cellular structure of Plasti-Fab EPS products provides a greater surface area than the raw material for the chemical to act upon; therefore, damage may occur quicker and to a greater extent. Similarly, low-density Plasti-Fab EPS products may be attacked more easily than higher density product.

If a Plasti-Fab EPS product may come into contact with unknown substances, such as paint or adhesive, that could contain damaging solvents, it is advisable to conduct a small-scale test under practical conditions prior to exposing the product to the substance on a large scale. The length of the exposure period may be shortened considerably if the test is carried out at temperatures above 22 °C (72 °F) - e.g., 50 °C (122 °F). To get clear evidence of the resistance of a Plasti-Fab EPS product to a given chemical, the severity of the test conditions can be increased by testing an EPS product type that has density much lower than that intended for the actual application.

The suitability of this product for a particular application must be tested in each individual case. The information submitted in this product information bulletin is based upon our current knowledge and experience. In view of the many factors that may affect processing and application, the data provided in the attached table does not relieve users of the responsibility to carry out their own tests and experiments nor do they imply any legally binding assurance of certain properties or of suitability for a specific purpose.

The table attached to this bulletin provides an overview of Plasti-Fab EPS product resistance to the chemicals listed using the following symbols in the column beside the chemical named:

- The plus (+) symbol indicates Plasti-Fab EPS product is unchanged or resistant to exposure.
- The plus/minus (\pm) symbol indicates Plasti-Fab EPS product may undergo a slight change or has limited resistance to exposure; in other words, there may be small reduction in volume due to exposure.
- The minus (–) symbol indicates that Plasti-Fab EPS product may be severely damaged by exposure or, in other words, it not resistant to attack by the chemical.

Contacting Substance	Contacting Substance	Contacting Substance
<p>Seawater + Water +</p> <p>Alkalis: Ammonia water + Bleaching solutions + (hypochlorite, hydrogen peroxide) Potassium hydroxide solution + Lime water + Caustic soda solution + Soap solutions +</p> <p>Dilute acids: Formic acid, 50 % + Acetic acid, 50 % + Hydrofluoric acid, 4 % + Hydrofluoric acid, 40 % + Phosphoric acid, 7 % + Phosphoric acid, 50 % + Nitric acid, 13 % + Nitric acid, 50 % + Hydrochloric acid, 7 % + Hydrochloric acid, 18 % + Sulfuric acid, 10 % + Sulfuric acid, 50 % +</p> <p>Concentrated acids: Formic acid, 99 % + Acetic acid, 96 % – Propanoic acid, 99 % – Nitric acid, 65 % + Hydrochloric acid, 36 % + Sulfuric acid, 98 % +</p> <p>Fuming acids: Nitric acid – Sulfuric acid –</p> <p>Anhydrides: Acetic anhydride – Carbon dioxide, solid + Sulfur trioxide –</p> <p>Weak acids: Humic acid + Carbonic acid + Lactic acid + Tartaric acid + Citric acid +</p> <p>Gases (inorganic): Ammonia – Bromine – Chlorine – Sulfur dioxide –</p>	<p>Gases (organic): Butadiene – Butane – Butene – Natural gas Ethane + Ethene (ethylene) + Ethyne (acetylene) + Methane + Propane + Propene (propylene) + Propene (propylene) oxide –</p> <p>Liquefied gases (inorganic): Ammonia + Inert gases + Oxygen + (risk of explosion) Sulfur dioxide – Nitrogen + Hydrogen +</p> <p>Liquefied gases (inorganic): Methane + Ethane + Ethene – Ethene oxide – Ethyne (acetylene) – Propane – Propene – Propene oxide – Butane – Butene – Butadiene – Natural gas +</p> <p>Aliphatic hydrocarbons: Cyclohexane – Diesel fuel, Heating oil – Heptane – Hexane – Paraffin oil ± White spirit 55 – 95 °C – White spirit 155 – 185 °C – Vaseline + Gasoline –</p> <p>Alcohols: Methanol ± Ethanol ± Ethylene glycol + Diethylene glycol + Isopropanol + Butanol ± Cyclohexanol + Glycerin + Coconut oil alcohol +</p>	<p>Amines: Aniline – Diethylamine – Ethylamine + Triethylamine –</p> <p>Miscellaneous organic substances: Acetone – Acetonitrile – Acrylonitrile – Dimethylformamide – Esters – Ethers – Halogenated hydrocarbons – Ketones – Paint thinners – Olive oil + Tetrahydrofuran –</p> <p>Inorganic building materials: Anhydrite + Gypsum + Lime + Sand + Cement +</p> <p>Organic building materials: Bitumen + Water-based rapid-curing cutback and bituminous knife fillers + Solvent-based rapid-curing cutback and bituminous knife fillers (free from aromatics) –</p> <p>Aromatics: Benzene – Cumene – Ethylbenzene – Phenol, 1% aq. soln. + Phenol, 33 % aq. soln. – Styrene – Toluene – Xylene –</p> <p>Vapors of: Camphor – Naphthalene –</p>