CLEANING INSTRUCTIONS

LEXAN™ POLYCARBONATE SHEETS

CHEMISTRY THAT MATTERS™

SABIC offers a high-performance, engineering thermoplastics LEXAN™ sheet and film portfolio and full-service solutions for customers in various segments, including mass transportation, consumer electronics, glazing, building and construction.

The company supports customers by providing materials that comply with relevant regulations, enabling customers to find new solutions to evolving requirements for fire safety, as well as related challenges of sustainability and cost reduction.

SABIC's LEXAN sheet products are directly extruded from LEXAN™ resin and offer significant advantages over many other glazing materials in terms of design freedom, light-weight, fire performance, UV protection and thermal insulation.

Furthermore, LEXAN sheet combines high impact resistance with optical clarity, thus providing superior safety and security against vandalism and intrusion.

Periodic cleaning of LEXAN polycarbonate sheet, using correct procedures with compatible household cleaners, is recommended to prolong the service life of your material. In the following pages you can read and learn how to clean LEXAN sheets in the best ways and to keep them in good condition.

These cleaning recommendations apply to all LEXAN™ polycarbonate sheet products, including, but not limited to, LEXAN solid sheet and signs, LEXAN coated MARGARD™ sheet and LEXAN™ THERMOCLEAR™ (multiwall) sheet. These techniques are based on standard industry practices.

CLEANING PROCEDURE FOR SMALL AREAS MANUAL:

1. Gently wash the sheet with a solution of mild soap an lukewarm water, using a soft, grid free cloth or sponge to loosen any dirt or grime.
2. Fresh paint splashes, grease and smeared glazing compounds can be removed easily before drying by rubbing lightly with a soft cloth using petroleum ether (BP65), hexane or heptane. Afterwards, wash the sheet using mild soap and lukewarm water.
3. Scratches and minor abrasions can be minimized by using a mild automobile polish. We suggest that a test be made on a small area of LEXAN sheet with the polish selected and that the polish manufacturer's instructions be followed, prior to using the polish on the entire sheet.
4. Finally, thoroughly rinse with clean water to remove any cleaner residue and dry the surface with a soft cloth to prevent water spotting.

CLEANING PROCEDURE FOR LARGE AREAS AUTOMATED:

1. Clean the surface using a high pressure water cleaner (max. 100bar or 1,450psi) and/or a steam cleaner. We suggest that a test be made on a small area, prior to cleaning the entire sheet.
2. Use of additives to the water and/or steam should be avoided.

OTHER IMPORTANT INSTRUCTIONS FOR ALL LEXAN SHEETS:

- Never use abrasive or highly alkaline cleaner on LEXAN polycarbonate materials.
- Never use aromatic or halogenated solvents like toluene, benzene, gasoline, acetone or carbon tetrachloride on LEXAN polycarbonate materials.
- Use of incompatible cleaning materials with LEXAN sheet can cause structural and/or surface damage. Please contact your SABIC representative in case of any doubts of your cleaning material.
- Contact with harsh solvents such as methyl ethyl ketone (MEK) or hydrochloric acid can result in surface degradation and possible crazing of LEXAN sheet.
- Never scrub with brushes, steel wool or other abrasive materials.
- Never use squeegees, razorblades or other sharp instruments to remove deposits or spots.
- Do not clean LEXAN polycarbonate sheet in direct sunlight or at high temperatures as this can lead to staining.
- For all mentioned chemicals consult the manufacturer's material safety datasheet (MSDS) for proper safety.

ADDITIONAL IMPORTANT CONSIDERATIONS FOR MULTIWALL AND CORRUGATED SHEET:

- Cleaners and solvents generally recommended for use on polycarbonate are not necessarily compatible with the UV protected surfaces of LEXAN multiwall, corrugated and sign polycarbonate sheet materials.
- Do not use alcohols on the UV protected surfaces of LEXAN sheet.
- Never clean the DRIPGARD surface of LEXAN multiwall sheet and corrugated sheets.

GRAFFITI REMOVAL FROM LEXAN™ MARGARD™ SHEET

- Use butyl cellosolve with a clean, soft cloth to remove paints, marking pen inks and lipstick.
  Afterwards wash the sheet using mild soap and lukewarm water, then rinse with clean water to remove residue and dry with a soft cloth.

- Masking tape and adhesive tape work well for lifting off old, weathered paints.

- To remove label stickers, the use of kerosene or petroleum ether (BP65) is generally effective. If the solvent does not penetrate the sticker material, apply heat (hair dryer) to soften the adhesive and promote removal of the sticker. Afterwards the cleaning procedure for small areas as outlined in the previous page should be followed.

CHEMICAL COMPATIBILITY OVERVIEW

This overview shows the chemical resistancy of LEXAN™ uncoated polycarbonate sheet. Chemical compatibility of thermoplastics e.g. LEXAN™ sheet is dependent on contact time, temperature and stress (external stress to which the application is subjected). Chemical exposure can result in discoloration, softening, swelling, crazing, cracking or loss of properties of the thermoplastic. The chemicals listed have been evaluated for LEXAN™ sheet according a very stringent SABIC-test method.

This test incorporates exposure to the chemical under defined conditions including temperature (20 and 80°C) and stress (0.5 and 1% strain) for a time period of seven days. The results are listed in the overview using symbols (+ or 0 or –) which are explained below.

This information should be used as indicative only. The true chemical compatibility can only be determined under conditions as in the final application. Please contact your local representative in case additional information is required, for example related to coated polycarbonate sheet solutions.

–	**Poor**	Not recommended-will result in failure or severe degradation.
0	**Fair**	Found marginal-only for short exposures at lower temperatures or when loss of properties is not critical.
+	**Good**	Found unaffected in its performance when exposed with regards to time, temperature and stress according the SABIC-test method.

Acid, Mineral

Borax acid	+
Hydrogen chloride 20%	+
Hydrogen chloride 25%	–
Hydrogen fluoride 25%	+
Nitric acid 70%	–
Perchloric acid	–
Phosphorus pentoxide dry	+
Phosphoric acid 1%	+
Phosphoric acid 10%	–
Phosphorus pentachloride	+
Sulfuric acid 50%	+
Sulfuric acid 70%	–
Sulfurous acid 5%	–

Acid, Organic

Acetic anhydride	–
Formic acid concentrate	–
Gallic acid	+
Maleic acid	+
Mercapto acetic acid	–
Oleic acid	+
Palmitic acid	+
Phenol sulfonic acid	–
Phenoxyacetic acid	+
Phthalic anhydride	+
Salycilic acid	+
Tannic acid	+
Tannic acid 20%	–
Thiodiacetic acid	+
Trichlor acetic acid 10%	–
5% Sulfamine acid	0

Alcohol

Allyl alcohol	–
Amyl alcohol	–
Butoxyethanol	–
Chlorethanol 2	–
Decyl alcohol	–
Dodecyl alcohol	–
Ethanol	–
Ethyl glycol 100%	–
Ethyl glycol 60%	+
Furfuryl alcohol	–
Glycerine	+
Hepthyl alcohol	–
Isobutanol	0
Nonyl alcohol	–
Octyl alcohol	+
Oxydiethanol 2.2	+
Phenethyl alcohol	–
Polyalkylene glycol	–
Polyethylene glycol	+
Propylene glycol	–
Sorbitol	+
Thiodiglycol 5%	–
Triethylene glycol	+
Tripropylene glycol	–

Aldehyde

Acetaldehyde	–
Butyraldehyde	–
Formaldehyde solvent 37%	+
Formalin	+
Propionaldehyde	–

Amide

Dimethylformamide	–

Amine

Aniline	–
Diphenylamine	–
Methylaniline N	–
Methylene dianiline	–
Phenylhydrazine	–
Pyridine	–
Triethanolamine	+
Hydroxylamine	+

Base

Aluminium hydroxide powder	+
Ammonia concentrate	–
Ammonium hydroxide 0.13%	–
Calcium hydroxide	–
Potassium hydroxide 10%	–
Sodium hydroxide dry	+
Sodium hydroxide 10%	–
Sodium thotalamate	+

Ester

Benzyl benzoate	–
Butyl cellosolve acetate	–
Butyl stearate	–
Cello acetobutyrate	–
Cellulose acetate	–
Cellulose propionate	–
Dibutyl phthalate	–
Didecyl carbonate	–

Diisodecyl phthalate	–
Diisononyl phthalate	+
Dioctyl phthalate	–
Dioctyl sebacate	–
Ditridecyl carbonate	–
Ditridecyl phthalate	–
Ethyl bromoacetate	+
Ethyl butyrate	–
Ethyl cellusolve 5%	–
Ethyl chloracetate	–
Ethyl cyanoacetate	–
Ethyl lactate	–
Ethyl salicylate	–
Isopropyl myristrate	–
Methyl acetate	+
Methyl salicylate	–
Methylbenzoate	–
Triacetine	–
Tributoxyethyl phosphate	–
Tributyl cello phosphate	–
2 Dodecyl phenyl carbonate	+

Ether

Ether	–
Ethyl cellosolve 5%	–
Methyl cellosolve	–
Polyalkylene glycol	–
Polyethylene glycol	+
Polyethylene sulfide	–
Propylene oxide	–

Gaseous

Ammonia concentrate	–
Bromine	–
Chloracetophenon	–
Chlorine	–
Iodine	–
Isobutane	–
Methane	–
Oxygen	+
Ozone 2%	–
Propylene	+
Sulfur dioxide	–
Sulphur hexafluoride	–

Halogenated HC

Acethylene dibromo	–
Acethylene tetrabromide	–
Bromochloromethane	–
Carbon tetrachloride	–
Chlorethanol 2	–
Chlorobenzene	–
Chlorobutane	–
Chloroform	–
Dibromomethane	–
Dichloroethane	–
Dichlorohydroxybenzene	+
Dichloromethane	–
Ethyl bromoacetate	+

Ketone

Methyl ethyl ketone	–

Metal & Metal Oxide

Aluminium oxide	+
Arsenic trioxide	–
Calcium oxide paste	–
Cuprous oxide	+
Mercury metallic	–

Phenol

Allyl 4methoxyphenol	–
Cresol	–
P–Phenylphenol	–
Pentachlorophenol	–
Phenol 5%	–
Phenoxyacetic	+

Salt, Inorganic

Aluminium ammonium sulfate	–
Aluminium chloride	–
Aluminium fluoride	+
Aluminium potassium sulfate	–
Aluminium sodium sulfate	+
Ammonium bicarbonate	+
Ammonium bromide	+
Ammonium carbonate	–
Ammonium dichromate	+
Ammonium persulfate	+
Arsenic trioxide	–
Barium carbonate	+
Barium chloride	+
Barium sulfate	+
Calcium carbonate paste	–
Calcium chloride	+
Calcium sulfate	+
Cesium bromide	+
Copper (II) chloride 5%	+
Iron (II) chloride	–
Iron (III) ammonium sulfate	+
Iron (III) chloride saturated	+
Iron (III) nitrate	–
Iron (III) sulfate	+
Lithium bromide	+
Lithium hydride powder	+
Magnesium bromide	+
Magnesium chloride	+
Magnesium nitrate	+
Nickel nitrate	+
Potassium bicarbonate dry	+
Potassium bisulfate	+
Potassium bromate	+
Potassium bromide	+
Potassium carbonate	+
Potassium chlorate	+
Potassium chloride saturated	–
Potassium chloride 15%	+
Potassium chormium sulfate	–
Potassium cyanide powder	+
Potassium dichromate	+
Potassium iodide	+
Potassium nitrate	+
Potassium permanganate	–
Potassium persulfate	+
Potassium sulfate	+
Silver chloride saturated	–
Silver nitrate	+
Sodium bicarbonate saturated	0
Sodium bicarbonate 13%	–
Sodium bisulfate	+
Sodium bromate	+
Sodium bromide	+
Sodium carbonate	+
Sodium carbonate solvent	–
Sodium chlorate	+
Sodium etherlaurylsulphate	0
Sodium ferrycyanide	+
Sodium fluroride	+
Sodium hypochlorite 6%	+
Sodium hypochlorite 15%	–
Sodium nitrate 10%	–
Sodium perborate	+
Sodium phosphate	+
Sodium silicate	+
Sodium sulfide	–
Sodium sulfite	+
Strontium bromide	+
Tin (II) chloride	+
Tin (IV) chloride	+
Titanium tetrachloride	+
Trisodium phosphate 5%	–
Zinc bromide	+
Zinc oxide	–
Zinc sulfate	+

Salt, Organic

Aluminium acetane	+
Ammonium acetate	–
Ammonium oxalate	+
Aniline sulfate	+
Potassium acetate 30%	–
Quinine sulfate	–
Sodium acetate 30%	–
Valine bromide dl	+

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LEXAN™ Tough Virtually Unbreakable Polycarbonate Sheet

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