

Cleaning of DSM Engineering Plastics

The surfaces of parts that must be painted or joined together by a gluing process, like solvent or adhesive bonding, must be clean and free of foreign materials, such as dirt particles, oil, grease, and mold release agent in order to achieve a strong bond.

If the plastic pellets do not contain a mold release agent and no mold release agent has been sprayed in the mold during the injection molding process and the parts were not touched with bare hands, cleaning in an air bath to remove dust particles may suffice.

The need to use a mold release agent can be avoided by designing parts with generous release angles.

If necessary, persistent contaminants can be removed by washing in a suitable solvent. Tables 1 to 5 give some examples of solvents that can be used for DSM's thermoplastics, assuming that the parts will not be exposed to the cleaning solvents for more than 10 minutes.

Some solvents may cause environmental stress cracking in parts molded from polycarbonate and polycarbonate blends and which are subjected to internal or external stresses. Chlorinated and aromatic solvents, as well as ketones, should be avoided for these polymers.

It is important to consult the Material Safety Data Sheet of the solvent used, for health and safety information and for proper handling and protective equipment.

An automated cleaning line may be useful to speed up the cleaning process and improve quality control. An ultrasonic bath or a spraying installation can be considered.

Alcohols	Butanol
	Ethanol
	Isopropanol
	Methanol
	Propanol
Aliphatics	Heptane
	Hexane
Aromatics	Benzene
	Toluene
Ketones	Acetone
	Methyl ethyl ketone
Chlorinated hydrocarbons	Methyl chloride
	Tetra chloro methane
Others	Mild solution of soap (pH between 4.5 and 7.5)

Date: 30 December, 2004



Table 2. Cleaning solvents for Stanyl (PA46)	
Alcohols	Butanol
	Ethanol
	Isopropanol
	Propanol
Aliphatics	Heptane
	Hexane
Aromatics	Benzene
	Toluene
Ketones	Acetone
	Methyl ethyl ketone
Chlorinated hydrocarbons	Methyl chloride
	Tetra chloro methane
Others	Mild solution of soap (pH between 4.5 and 7.5)

Table 3. Cleaning solvents for Arnite (PBT and PET)	
Alcohols	Butanol
	Ethanol
	Isopropanol
	Methanol
	Propanol
Aliphatics	Heptane
	Hexane
Aromatics	Benzene
	Toluene
Ketones	Acetone
	Methyl ethyl ketone
Ester	Ethyl acetate
	Methyl acetate
Chlorinated hydrocarbons	Methylene chloride
	1,1,1-Trichloro ethane
Chlorinated fluorocarbons	Trichloro trifluoro ethane
	Trichloro trifluoro methane
Others	Mild solution of soap (pH between 4.5 and 7.5)

Table 4. Cleaning solvents for Arnitel (TPE)	
Alcohols	Ethanol
	Isopropanol
	Methanol
	Propanol
Aliphatics	Heptane
	Hexane
Ketones	Acetone
	Methyl ethyl ketone
Others	Mild solution of soap (pH between 4.5 and 7.5)

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Alcohols	Butanol
	Ethanol
	Isobutanol
	Isopropanol
	Propanol
Aliphatics	Heptane
	Hexane
Others	Mild solution of soap (pH between 4.5 and 7.5)

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