

Technical data sheet

Product name: Terrasol® IM5WE
Date of issue: 20 October 2021

Version: 1.0

Designation of product, preparation and manufacturer

Trade name: Terrasol® IM5WE
Use of product: Thermoplastic polyvinyl alcohol, suitable for manufacture of water soluble shaped articles by injectin moulding. Solubility at 23°C is 48 hours, according to ASTM D5226.
Manufacturer: FKUR Kunststoff GmbH
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Physical properties

Melt flow rate (190 °C/2.16 kg)	9	[g/10 min]	ISO 1133
Moisture Content	1.2	[%]	
Melting temperature	185	[°C]	ISO 3146-C
Density	1.25	[g/cm ³]	ISO 1183
Bulk density	670	[kg/m ³]	ISO 60
Pellet size	3	[mm]	ISO 2591

The figures should be regarded as guide values only. Under certain conditions the properties can be influenced to a significant extent by the processing conditions.

Processing and Handling Information

General

Terrasol® is a water soluble thermoplastic polyvinyl alcohol (PVOH). As it is a moisture sensitive material it should be kept in its original packaging.

Drying

Terrasol® does not require drying before use, however it is best to keep the bags sealed until it is used and reseal the bags after use to prevent moisture ingress.

Storage

Terrasol® pellets are packed in aluminium bags. It should be kept in the packaging it was supplied, if repacked then this should ideally be in an aluminium foil bag or thick PE bag and be sealed airtight. Store between 10-35°C and 30-80% relative humidity. Do not store in freezing conditions. It remains stable for at least 12 months in its original container provided it is stored correctly.

Once the packaging is opened the material absorbs moisture and therefore should be processed immediately from previously unopened original containers.

Storage time of the finished products made of Terrasol® depends on processing parameters and of climate conditions in the respective area. Because of these essential and complex interacting parameters, FKUR Kunststoff GmbH cannot give any shelf life guarantees for finished products. Please notice that the conditions mentioned above depend on experience of our customers. Each customer should execute individual storage tests according to product specifications and storage requirements.

Processing conditions for injection moulding

Machine equipment:	Standard injection moulding line for the processing of thermoplastic polyolefins		
Machine settings:	Feeding Zone	60	[°C]
	Zone 1	180	[°C]
	Zone 2	190	[°C]
	Zone 3	200	[°C]
	Machine nozzle	210	[°C]
	Mould temperature	55	[°C]
	Holding pressure level	400	[bar]
	Cooling time	30	[s]
	Max. dwell time	600	[s]

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Purging advice for injection moulding

Before production:	The barrel should be purged immediately before start-up. Polyethylene can be used as a purging material, using a 2-4 melt flow index LDPE.
During production:	Melt temperature during extrusion should not exceed 225 °C because at higher temperatures the material suffers thermal damage, recognizable by yellow discoloration and an increase in melt pressure and torque. Residence time should be held as short as possible, 5-10 minutes at most. Preferably barrel should be sized such that the residence is small and the PVOH materials should not be left hot in the machine for extended periods.
After production:	Following extrusion of Terrasol® the extruder must be cleaned with a polyolefin of similar viscosity (e.g. 2-4 melt flow index LDPE). Do not allow PVOH material to remain hot inside the machine for extended periods as the material will degrade.
Important information:	The dwell time of the material inside the machine shall be reduced to a minimum in order to lower the risk of degradation.

Legal notice

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