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TECHNICAL DATA

Greenlink HR250

HIGH RESILIENCE FLEXIBLE POLYURETHANE FOAM

Greenlink HR250 is high resilience water blown flexible polyurethane foam. This product is designed for the manufacture of cushions, for office and domestic furniture.

The system can be manually drill mixed (@ a minimum speed of 3000 rpm) but it is preferable to process through a plural component polyurethane dispensing machine.

COMPONENT PROPERTIES

	Polyol	Isocyanate
Appearance	Opaque liquid	Brown coloured liquid
Brookfield Viscosity (cps)	1450	450
Specific Gravity	1.05	1.20
Isocyanate Value NCO (%)	N/A	25.5

REACTION PROFILE

Laboratory results based on hand-mix @ 20°C

Mix ratio by weight (Polyol : Iso) 100 : 57

Mix time (seconds)	7-8
Cream time (seconds)	12
Gel time (seconds)	70
Tack free time (seconds)	300
Free rise density (kg/m³)	57

MIXING RATIO

The ratio of Greenlink HR250 can be changed to produce harder or softer foam. For a different ratio to produce softer or harder HR foam please contact Era Polymers technical Department for further information.

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MIXING PROCEDURES

To produce high quality foam it is essential that the following procedures be carefully followed.

1. The isocyanate should be **accurately** weighed. Suitable containers include metal or plastic. Ensure that the containers are clean and dry.
2. The polyol should then also be **accurately** weighed into the same container. The reaction between the two products essentially begins immediately when the two products meet. **IT IS IMPORTANT TO MECHANICALLY MIX HR250 polyol BEFORE REMOVING ANY MATERIAL FROM THE DRUM.**
3. The product should be mixed with an electric drill to which a paint mixer has been attached. It is essential that the drill is capable of mixing at least at 3000 rpm. A slower speed will produce poor quality foam.
4. The product should be mixed for typically 7-8 seconds. The mixing time will depend on a variety of factors including:

Cream time of the material: The product should be mixed and poured into the mould before the cream time has been reached.

The temperature of the Iso / poly: If ambient and chemical temperatures are too high then the cream time is much faster.

Batch size: Generally a larger batch size will react faster than a smaller batch.

MOULD TEMPERATURE

Ideally the mould temperature should be at 35-40°C. A mould temperature of 35-40°C is recommended to aid in curing the foam and to produce parts that will demould with a silky finish on the moulded surface.

MOULDS

a. FABRICATION

Moulds can be fabricated from a variety of substances including metal, plastics, fibreglass and timber. A mould release, such as Eralease must be used before each moulding.

b. CONDITIONING

When using a new mould, some release agent conditioning of the mould surface may be necessary. To do this, 2-3 coats of release agent should be applied one after the other, with sufficient time between each coat to allow for solvent evaporation. A heavy duty wax based release agent with a fast drying solvent base is recommended. Different surface textures may be achieved by spraying different mould release agents.

c. VENTING

These foams generate pressure inside a mould. It is important therefore to incorporate a few small (about 1 mm) vent holes in the mould. This will allow contained air and gas to escape. It is important however, to only allow a minimal amount of material to escape. If a large amount escapes either through the vent holes or through the part line of the mould, then this effect will produce large holes near the escape point. Keep the number of vent holes to a minimum. If vent holes are too large it may affect the pressure within the mould and result in unacceptable foam e.g. foam shrinkage or surface imperfections on moulded foam.

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d. POSITIONING OF MOULD

If a void free space is required it may be necessary to angle the mould in such a way that the air vents are at the highest point.

POST CURE

Greenlink HR250 foam will cure at ambient temperatures.

NOTE: The foams when de-moulded will still be “green”. It should therefore be handled carefully so as not to introduce a permanent set.

Additionally moulded HR foams may have a certain percentage of closed cells. These closed cells will shrink as the foam cools. The cells can be “opened” by gently crushing the foam after demould.

HANDLING OF RAW MATERIALS

When opening the container of isocyanate or polyol, take care to release any internal pressure slowly.

Greenlink HR250 Isocyanate is a liquid at room temperature. To produce high quality foam it is essential that the following procedures be carefully followed.

Isocyanate should be stored in a dry environment, indoors in a well ventilated area in keeping with good practice for normal factory conditions. The isocyanate is to be stored between 20-30°C.

The isocyanate in the drum must be blanketed with dry nitrogen after decanting material from the container as moisture in the air will react with the isocyanate if the container is left open to the atmosphere.

If the temperature falls below 15°C, the product may crystallize. If crystallisation does occur, melt-out at 60-70°C will be necessary. Do not store the isocyanate above 50°C as this will lead to the formation of insoluble solids and the storage of the product is shortened.

Under the recommended storage conditions and in properly sealed manufacturer's containers, the storage life of Greenlink HR250 isocyanate is 12 months unopened.

As with all isocyanates, good industrial practice should be employed, e.g. avoid contact with eyes, skin and clothing. Avoid breathing in vapours. Please refer to material safety datasheets for further information.

Greenlink HR250 Polyol presents no particular health hazards.

IT IS IMPORTANT TO MECHANICALLY MIX HR250 polyol BEFORE USE

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