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TECHNICAL DATA
Greenlink EF530

HIGH PERFORMANCE POLYESTER BASED URETHANE MOULDING FOAM

Greenlink EF530 is MDI elastomeric polyurethane foam with a relatively high density 510 kg/m3. The product is polyester with a small addition of polyether. Apart from abrasion and impact resistance, they offer exceptional cut and tear resistance as well as a high degree of chemical and oil resistance.

The system can be manually drill mixed (@ a minimum speed of 2000rpm), however, it is preferable to process through plural component polyurethane dispensing machine.

COMPONENT PROPERTIES

	Isocyanate	Polyol
Appearance	Opaque	Opaque
Viscosity (cps)	910 ± 50 @ 30°C	1200 ± 100 @ 40°C
Specific Gravity	1.12 @ 30°C	1.16 @ 40°C

REACTION PROFILE

Laboratory results based on hand-mix.

Mix ratio by weight (Polyol : Iso) **100 : 106**

Temperature of Polyol (°C)	20 - 30
Temperature of Isocyanate (°C)	25 – 30
Mould Temperature (°C)	35 – 45
Mix Time (seconds)	20 - 30
Cream Time (seconds)	60
Gel Time (seconds)	85
Tack-Free Time (seconds):	160
Free Rise Density (kg/m^3)	490
Demould Time (minutes) *	15

* Demould time is based on laboratory results of a sample size 100-200g of moulded foam. Demould time is dependent on process temperatures for components, mould temperature, mass of material mixed and whether it is hand or machine processed.

Properties presented above are to be used as a guide only and are not intended for specification purposes.

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MIXING PROCEDURES

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

1. The Polyol should be **accurately** weighed. Suitable containers include metal or plastic. Ensure that the containers are clean and dry.

Note: the polyol is a blend of different components and should be mechanically stirred before removing material from the drum.

2. The Isocyanate should then also be **accurately** weighed into the same container. The reaction between the two products essentially begins immediately when the two products meet.

3. The mixture 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 2000 rpm. A slower speed will produce poor quality foam.

4. The mixture should be mixed for typically about 7 seconds. The mixing time will depend on a variety of factors including:

- **Cream time of the material:** The mixture should be mixed and poured into the mould before the cream time has been reached.
- **The temperature of the Polyol/Isocyanate**: 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 20°C HIGHER than the chemical temperature. Therefore if the chemical temperatures are 35°C then the mould temperature will be 30-40°C.

MOULDS

a. FABRICATION
Moulds can be fabricated from a variety of substances including metal, plastics, fiberglass 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 maybe necessary. To do this, 2-3 coats of release agent should be applied one after another, with sufficient time between each coat to allow for solvent evaporation.

c. VENTING
These elastomeric 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.

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.

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POST CURE

Greenlink EF530 will continue to cure at room temperature after demould time and the maximum physical properties will develop at room temperature after a week. This applies to "summer" temperatures. Ambient winter temperatures of 10 - 15°C will unacceptably retard the rate of cure; therefore a "post cure" would be desirable under these conditions. A suggested post cure would be 1- 2 hours at 50 - 60°C.

NOTE: The foam, when de-moulded, will be "green". It should therefore be carefully handled so as to not introduce a permanent set.

HANDLING OF RAW MATERIALS

EF530 ISO
EF530 Iso is an MDI prepolymer. It is liquid at room temperature, hence:
1. Store in a dry environment, i.e. exclude moisture by blanketing with nitrogen.
2. Store between 20 - 35°C. If the temperature falls below 20°C, the product may crystallise.
3. As with all isocyanates, good industrial practice should be employed, e.g. avoid contact with eyes, skin and clothing. Avoid breathing in vapours. Please consult Material Safety Data Sheet for further instructions.

EF530 POLYOL
EF530 Polyol presents no particular health hazards.

NOTE: The polyol may separate with time - it is suggested that the entire contents be stirred thoroughly before decanting.

NOTE: The polyol may solidify if the temperature drops below 15^{o}C. Heating to 50^{o}C will re-melt the polyol.