

ES-60 A/B
60 SHORE A POLYURETHANE ELASTOMER



ES-60 is a high performance, ester-based polyurethane system designed specifically for use in more demanding chemical environments. ES-60 is resistant to chemical degradation and exposure. It also has the ability to withstand high temperatures and exhibits excellent wear characteristics for use in industries such as Oil & Gas, Aggregate/Mining, etc. Some common applications include O rings, gaskets, conveyor belts, rollers and seals in hydraulic and high pressure pneumatic systems. (Consider using our ether-based urethanes in high moisture applications.)

PHYSICAL PROPERTIES	TEST METHOD	RESULTS*
Hardness, Shore A	ASTM D2240-04e1	60 ± 5
Density (g/cc)	ASTM D792-00	1.244
Cubic Inches per Pound	N/A	23.39
Color/Appearance	Visual	Translucent Pale Yellow
Tensile Strength (psi)	ASTM D412-98a(2002)e1	6,670
Tensile Modulus (psi)	ASTM D412-98a(2002)e1	5,270
Elongation (%)	ASTM D412-98a(2002)e1	700
Tear Strength (pli)	ASTM D624-00e1	220
Shrinkage (in/in) linear	ASTM D2566 @ 1" depth	0.012 [†]

*Note: Reported physical properties are based on test specimens cured 1-3 hours at room temperature then 16 hours at 160°F (71°C).

[†]Shrink test specimens are cured for 24 hours at room temperature and then 16 hours at 160°F (71°C).

HANDLING PROPERTIES	Part A	Part B
Mix Ratio by weight	30	100
Mix Ratio by volume	29	100
Specific Gravity @ 77°F (25°C)	1.21	1.179
Color	Pale Yellow	Colorless
Viscosity (cps) @ 77°F (25°C) Brookfield	85	280 @ 150°F (65.6°C)
Mixed Viscosity (cps) @ 150°F (65.6°C) Brookfield	500	
Work Time, 100g mass @ 150°F (65.6°C)	3.5 – 4 minutes	
Gel Time	4.5 – 5.5 minutes	
Demold Time @ 150°F (65.6°C)	1 hour	

Properties above are typical and not for specifications.

CURE SCHEDULE/HEAT CURING:

Reported physical properties are based on cure schedule of 1-3 hours at 77°F (25°C) followed by 16 hours at 160°F (71°C).

PROCESS INFORMATION:

Pre-heat the “B” component (Part “B” comes as a solid substance) to 150°F (65.6°C) until it becomes liquid. Combine A & B after measuring the appropriate quantity desired for casting. It is best to use a Jiffy mixer type blade at low speed of 300-500 rpm for obtaining a thorough mix. To ensure air free castings add 0.05-0.1% AF-4 (anti-foam) just prior to completing the mix, then immediately vacuum de-gas the mixture.

NOTE:

At 150°F (65.6°C) the working time of this material is approximately 4 minutes which means the blending and vacuuming de-gas process must be done rapidly. To obtain maximum physical properties a post cure of 185°F (85°C) for 16 hours is recommended. We do not recommend curing temperature that exceeds 210°F (99°C).

STORAGE:

Store at ambient temperatures, 65-80°F (18-27°C). Unopened containers will have a shelf life of 6 months from date of shipment when properly stored at recommended temperatures. Purge opened containers with dry nitrogen before re-sealing.

PACKAGING	Part A	Part B	Cubic Inches per Kit
5-Gallon Kits	15 lbs.	50 lbs.	1,520

SAFETY PRECAUTIONS:

Use in a well-ventilated area. Avoid contact with skin using protective gloves and protective clothing. Repeat or prolonged contact on the skin may cause an allergic reaction. Eye protection is extremely important. Always use approved safety glasses or goggles when handling this product.

IF CONTACT OCCURS:

Skin: Immediately wash with soap and water. Remove contaminated clothing and launder before reuse. It is *not* recommended to remove resin from skin with solvents. Solvents only increase contact and dry skin. Seek qualified medical attention if allergic reactions occur.

Eyes: Immediately flush with water for at least 15 minutes. Call a physician.

Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by medical personnel. Never give anything by mouth to an unconscious person.

⚠️WARNING: This product can expose you to chemicals including Phenyl mercury neodecanoate, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

Refer to the Material Safety Data Sheet before using this product.



Handling Guide

NON-WARRANTY "Except for a warranty that materials substantially comply with the data presented in Manufacturer's latest bulletin describing the product (the basis for this substantial compliance is to be determined by the standard quality control tests generally performed by Manufacturer), all materials are sold "AS IS" and without any warranty express or implied as to merchantability, fitness for a particular purpose, patent, trademark or copyright infringement, or as to any other matter. In no event shall Manufacturer's liability for damages exceed Manufacturer's sale price of the particular quantity with respect to which damages are claimed."