

10102

Systems: Footwear

10102 is a polyurethane microcellular foam system designed primarily for high quality shoe sole.

APPLICATIONS

- Unit sole for sandal (open-pouring)

TYPICAL PROPERTIES

10102 system consists of 4 components.

Materials	Typical Properties	Method	Unit	Value
A8411	Viscosity (@60° C)	QC0-I002-T025	cps	900 – 1,100
B9800	Isocyanate content		% by weight	18.7 – 19.7
	Viscosity (@60° C)	QC0-I002-T025	cps	200 – 300
C5205	Mixture of catalyst, chain extenders, cell regulators and foaming agent			
D5002H	Hardener			

PREPARATION OF PRODUCTS

A8411 must be warmed at 45-50 °C for 12-24 hr. before mixing with C5205 which does not preheat about 15 min. for 20 kg. A8411 or longer to ensure good mixing during mixing recommend to blow dried air (-40 °C dew point) to ensure no moisture contaminate during mixing.

B9800 should be warmed at 40-45°C for 12-24 hr. prior to its use. It has a clear to turbid solution appearance. The temperature of components in the production tanks should be 40-50°C to ensure good processing. Preheated temperature higher than 50 °C in long period is not recommend since the products might be lost reactivity and some undesirable reaction can take place.

MIXING RATIO BY WEIGHT

Materials	Ratio (pbw)
A8411	100.00
C5205	17.65

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FOAMING FORMULATION ON MACHINE

100 pbw the above mixture at working temperature $40 \pm 5^{\circ}\text{C}$
 125-130 pbw Component B9800 at working temperature $35 \pm 5^{\circ}\text{C}$ (The optimum ratio of Component B can be slightly different as per working condition.)
 Molding Temperature is about 40-50 °C

FOAMING CHARACTERISTICS (at 40°C)

Foam Properties	Unit	Hand mix method at 5000 RPM.
Cream time	secs., approx.	6 – 8
Gel time	secs., approx.	15 – 20
Tack free time	secs., approx.	30 – 40
Demold time	approx.	Min. 5 – 8
Free rise density	kg/m ³ , approx.	210 – 250

TYPICAL PROPERTIES OF FINISHED PRODUCTS

Physical Properties	Unit	Value
Molded density	kg/m ³	400 – 500
Hardness	Shore C, approx.	70
Tensile strength	kg/cm ² , approx.	40
Elongation	%, approx.	> 300
Flex resistance	(25°C), 30,000 cycles	No Cut Growth

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ADJUST MIXING RATIO TO VARY SOLE HARDNESS

Properties	Value	Value	Value	Value	Value
Molded density g/cc about	0.42 – 0.45	0.42 – 0.45	0.42 – 0.45	0.45	0.45
Hardness shore C	70 – 75	75 – 80	80 – 85	60 – 70	55 – 60
(depend on processing and mold)					
Weight of A8411, kg.	20	20	20	20	20
Weight of C5205, kg.	3.5	3.5	3.5	3	2.5
Weight of D5002H, kg.	-	1.0	1.5	-	-
Weight of water about * gm.	-	-	-	10	25
Polyol : Isocyanate (B9800) Ratio	100 : 125	100 : 150	100 : 158	100 : 112	100 : 100

* Weight of water adjust depend on the condition in each factory recommend to adjust to get ratio of molded density/Free rise density = 2.0 but free rise density is not less than 210 kg/m³.

PACKAGE

Material can be supplied in 200 litre drum or 20 litre can.

STORAGE AND HANDLING

The components are sensitive to moisture and should therefore at all times be kept in sealed drums under roof and avoid contact to direct sunlight. All products should be kept on pallet in warehouses. Storage temperatures should be within the range 20-25°C to ensure maximum shelf life. B9800 at the best condition can be used up to 6 months, since the high humidity and warm condition such as Thailand the time consumption within 3 months is recommended.

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