Technical Data Sheet

VORASURF™ SZ-1328E Fluid
VORASURF™ SZ-1346E Fluid

Silicone surfactants for high-resiliency molded polyurethane foam

Features & Benefits

- Non-hydrolyzable
- Wide process range in production of high-resiliency molded polyurethane foam

Composition

- Non-hydrolyzable silicone surfactants

Applications

- Surfactants for high-resiliency molded polyurethane (PU) foam

Typical Properties

Specification Writers: These values are not intended for use in preparing specifications.

Test[1]	Property	Unit	Result	
			VORASURF™ SZ-1328E Fluid	VORASURF™ SZ-1346E Fluid
CTM[1] 0176	Appearance		Colorless to pale yellow	
CTM 0080	Color, Gardner		1	1
CTM 0001A	Specific Gravity		0.97	1.01
CTM 0006A	Flash Point, Cleveland Open Cup	°C (°F)	161 (322)	186 (367)
CTM 0004	Viscosity at 25°C (77°F)	mm^2/s	15	380

1. CTMs (Corporate Test Methods) correspond to standard ASTM tests in most instances. Copies of CTMs are available upon request.

Description

VORASURF™ SZ-1328E Fluid and VORASURF™ SZ-1346E Fluid are non-hydrolyzable silicone surfactants recommended for production of high-resiliency molded PU foam.

Performance

Test conditions and results for surface cell condition and breathability are shown in Table 1. Test conditions and results for crushing ability are shown in Table 2.

How To Use

Use levels of 1 to 2 parts VORASURF™ Fluid per 100 parts polyol are suggested. The optimum surfactant loading should be defined for the particular foam formulation.

Table 1:
High-Resiliency Molded Foam Test – Surface Cell Condition and Breathability

Test Formulation

Component	Parts
Polyol	65.0
Polymer Polyol	35.0
Water	4.0
Amine Catalyst 1	0.32
Amine Catalyst 2	0.07
Surfactant	0.4, 1.5
TM-20	Index 95

Test Conditions

Component	Parts
Raw Material Temperature	25°C (77°F)
Mold	Aluminum, 200 x 200 x 100 mm
Mold Temperature	70°C (158°F)
Pouring Volume (polyol base)	140 g
Demolding Time	10 min

Results

Surfactant	Surfactant, pphp	Overall Density, kg/m^3	Surface Cell Condition	Air Flow, scfm	Air Flow, m^3/min
VORASURF SZ-1328E Fluid	0.4	32.2	Good	5.7	0.16
	1.5	30.9	Good	2.9	0.08
VORASURF SZ-1346E Fluid	0.4	32.0	Good	5.3	0.15
	1.5	32.5	Good	3.7	0.10

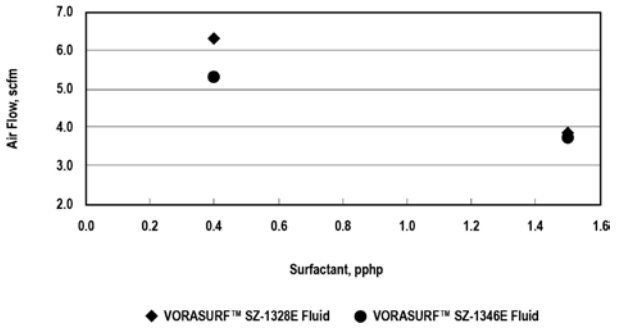

Table 2:
High-Resiliency Molded Foam Test – Crushing Ability

Test Formulation

Component	Parts
Polyol	65.0
Polymer Polyol	35.0
Water	3.0
Amine Catalyst 1	0.28
Amine Catalyst 2	0.28
Crosslinker 1	1.0
Crosslinker 2	2.5
Surfactant	1.0
TM-20	Index 95

Test Conditions

Component	Parts
Raw Material Temperature	25°C (77°F)
Mold	Aluminum, 400 x 400 x 100 mm
Mold Temperature	60°C (140°F)
Pouring Volume (polyol base)	660 g
Demolding Time	6 min
Test Method	After demolding, inner gas pressure is measured with roll crushing device

Results

Surfactant	Surfactant, pphp	Overall Density, kg/m^3	Surface Cell Condition	Crushing Ability Index
VORASURF SZ-1328E Fluid	1.0	50.8	Good	109
VORASURF SZ-1346E Fluid	1.0	51.1	Good	101

Handling Precautions

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED IN THIS DOCUMENT. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE ON THE DOW WEBSITE AT WWW.CONSUMER.DOW.COM, OR FROM YOUR DOW SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DOW CUSTOMER SERVICE.

Limitations

Avoid contamination with surfactant intended for flexible slab stock foam. VORASURF SZ-1328E Fluid, and VORASURF SZ-1346E Fluid are highly cell opening in slab stock foam and cause defoaming or collapse.

Surfactants for slab foam over-stabilize foam in high-resiliency systems and make foam tight, and can cause occasional shrinking.

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

Health And Environmental Information

To support customers in their product safety needs, Dow has an extensive Product Stewardship organization and a team of product safety and regulatory compliance specialists available in each area.

For further information, please see our website, www.consumer.dow.com or consult your local Dow representative.

http://www.consumer.dow.com