

VORASURF™ RF 5374 Additive for appliance foam

VORASURF™ RF 5374 Additive is the formulator's choice when complex cabinet design requires exceptional flow and good aesthetics in applications demanding high insulation performance, such as cold chain, commercial and domestic refrigeration appliances. The product offers high polyol side solubility, helping achieve high blend stability and clarity. The molecular architecture design helps formulators to meet all key properties desired from appliance foam systems, making VORASURF™ RF 5374 an excellent choice.

The tables below outline VORASURF™ RF 5374 Additive's advantage in key performances compared to two popular competitor products. This data was collected from trials performed using high quality industrial foam equipment.

Table 1. Formulations tested and blend quality

Properties	Test	Unit	Ref 1	Ref 2	VORASURF™ RF 5374 Additive
Formulation	Fully formulated polyol/ B- side without silicone	pbw	97.5	97.5	97.5
	Silicone surfactant	pbw	2.5	2.5	2.5
	Blowing agent: c-P/i-P (70/30 v/v)	pbw	14.5	14.5	14.5
	PAPI 27-Polymeric MDI	pbw	146	146	146
B-side blend quality	Appearance without c-P/i-P (70/30 v:v) @3 days	visual observation	ref	ref	=
	Appearance with c-P/i-P (70/30 v:v) @10 days	visual observation	ref	ref	=



Table 2. Reactivity

Test	Unit	Ref 1	Ref 2	VORASURF™ RF 5374 Additive
Cream time	s	3	3	3
Gel time	s	52	50	49
Free rise density @24h	kg/m3 (pcf)	24.0 (1.50)	23.5 (1.47)	23.5 (1.47)

Table 3. Flow properties

Test	Ref 1	Ref 2	VORASURF™ RF 5374 Additive
Flow index @24h	1.29	1.31	1.28
Average density distribution @10% over packing	0.18	0.39	0.31

Table 4. Mechanical properties and insulation performance

Properties	Test	Unit	Ref 1	Ref 2	VORASURF™ RF 5374 Additive
Mechanical	Average skin compression strength @10% over packing	kPa (psi)	131 (19.0)	138 (20.0)	135 (19.6)
	Average skin compression strength @15% over packing	kPa (psi)	149 (21.6)	142 (20.6)	146 (21.1)
Post mold expansion	Post-demold expansion @10% over packing @6 min	%	3.9	2.7	3.2
	Splits	yes/no	no	no	no
Insulation	Thermal conductivity @10°C (50°F), ASTM C518	mW/m.K (BTU.in/ft2.°F.h)	20.4 (0.141)	20.6 (0.144)	20.5 (0.142)
Aesthetics	Observation of Brett panels with inserts		ref	ref	ref

Typical values, not to be construed as specifications. Users should confirm results by their own tests.

VORASURF™ RF 5374 Additive is one of the new products Dow is offering among a large portfolio of silicone surfactants that offers numerous options for the rigid foam formulators. The above results were produced by using VORANOL™ polyols in combination with our silicone surfactant.

Contact your Dow representative or visit www.dow.com/vorasurf to learn more about VORASURF™ Silicone Polyurethane Additives and request samples online.

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