

GEOLITE* Modifier 91

URETHANE ADDITIVES - FLEXIBLE SLABSTOCK FOAM



Geolite Modifier 91 is a softening/stabilizing additive whose technology can offer ways to eliminate or substantially reduce the use of CFC's or alternative blowing agents in many grades of conventional slabstock foam. This technology is based on the principle of lowering the hardness by lowering the TDI index (typically to around 100), thus allowing the use of higher water and lower blowing agent levels to achieve the same hardness as the original grade. The addition of Geolite Modifier 91 is necessary for good foam processing at such low TDI indices.

This technique can provide equivalent physical properties and equal or better processing than conventional foam technology. Although it is applicable over the whole density range, its benefits are particularly pronounced in medium-to-high density soft grades. These grades are currently produced at low water levels combined with high blowing agent levels. However, the relatively low reaction temperature of such formulations can lead to processing problems: settling, undercured parts of the bun, etc.

Grades using Geolite Foam technology have exhibited higher reaction temperatures which can result in significant improvements of the problems mentioned.

Humidity has a negative effect on foam hardness in conventional foam grades, the external water reacting with excess TDI. When employing Geolite technology at TDI indices of 100 or less, this effect is typically minimized since no excess TDI is used, resulting in more consistent foam properties under varying humidities.

Geolite Modifier 91 contains 10 percent by weight water; this has to be taken into account when calculating a foam formulation.

Key Features and Typical Benefits

- foam additive with softening effect
- stabilizing additive to be considered for use at low TDI indices
- soft grades typically can be produced with approximately 30% less blowing agent
- reduced property spread within the buns, particularly at higher densities
- good properties in virtually all grades, comparable to conventional foam
- excellent processing of all currently available soft foam technologies
- low freezing point: -40°C (-40°F)

Typical Physical Properties

Physical Form	Liquid
Specific Gravity at 20/20°C	1.1285
Weight per Gallon at 20°C (68°F), lb (kg)	9.39 (4.26)
Viscosity at 25°C (77°F), cSt	170
Vapor Pressure at 20°C (68°F), mm Hg (psi)	<10 (<0.2)
Coefficient of Expansion at 55°C (130°F), per °C	0.00067
Flash Point, Pensky-Martens Closed Cup	None
Freezing Point, °C (°F)	-40 (-40)
Boiling Point, °C (°F)	130 (268)
Solubility in Water at 20°C (68°F)	Complete
Water Content, % by wt	10
Hydroxyl Number, mg KOH/g	
Without Water	785
With Water	1330
TDI/Geolite Modifier 91 Ratio	2.0615/1

Typical data are average data and actual results may vary.
Typical data shall not be used as product specifications.

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Patent Status

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

Product Safety, Handling and Storage

Customers should review the latest Material Safety Data Sheet (MSDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, and any special storage conditions required for safety. MSDS are available at www.momentive.com or, upon request, from any Momentive Performance Materials (MPM) representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

Limitations

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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Emergency Service

Momentive Performance Materials maintains an around-the-clock emergency service for its products.

<u>Location</u>	<u>Emergency Service Provider</u>	<u>Emergency Contact Number</u>
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Asia Pacific (except China)	NCEC	+44 (0) 1235239670
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All other locations world wide	NCEC	+44 (0) 1235239670
At sea	Radio U.S. Coast Guard in U.S. waters NCEC in International waters	+44 (0) 1235239670

For Health related calls, contact Momentive Performance Materials at +1-518-233-2500 (English only).

DO NOT WAIT. Phone if in doubt. You will be referred to a specialist for advice.

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