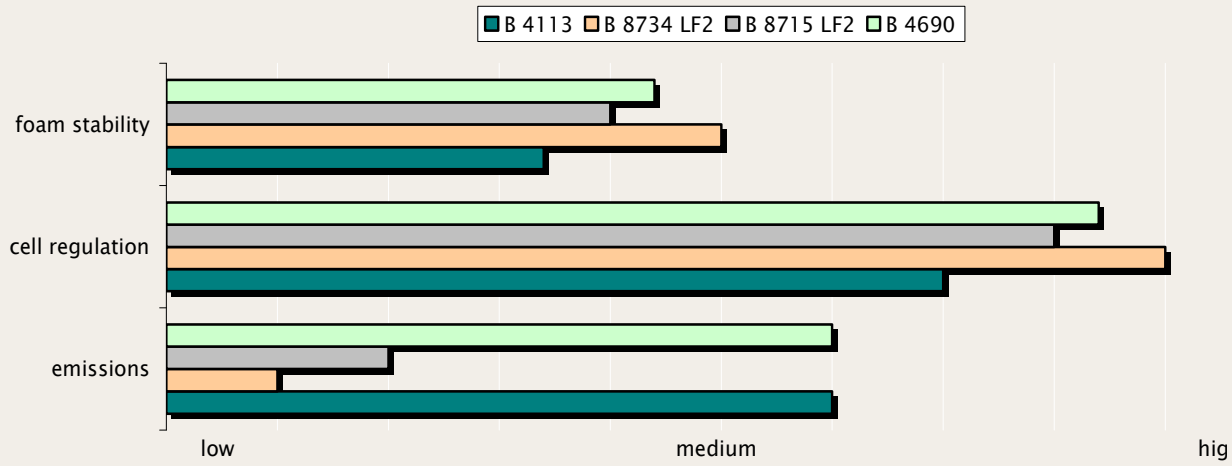
Technical Information

TEGOSTAB® B 4690



Specials/Highlights

- Excellent cell regulator with low-medium stabilising effect
- Open, easy to crush foam
- Wide processing latitude
- Non-hydrolysable
- Phthalate free

Application

- Typically used at 0.3 to 1.0 pphp (formulation and process conditions dependent)
- Recommended for predominantly MDI (TDI<~30%) based foams
- Also suitable as a co-surfactant for TDI or TDI/MDI based foams

Processing advice

- Can be added in polyol/fully formulated system or as a separate stream
- Should be used at room temperature

Chemical description

Preparation of organo-modified polysiloxanes

Physical properties

Appearance	colourless to slightly yellow clear liquid
Density (25 °C)	0.985 g/cm³
Viscosity (25 °C)	115 mPas
Water content	max. 0.2 %
Solubility	insoluble in water, soluble in polyols
Calculated OH number	42 mg KOH/g

Recommended storage conditions

The solidification point of TEGOSTAB® B 4690 is below -10 °C. Storage at low temperatures, e. g. around 0 °C brings the usual slight increase in the viscosity, but has no negative impact on the homogeneity. Nevertheless, it is recommended to warm up cold material to ambient room temperature before use.

For TEGOSTAB® B 4690 we guarantee a shelf life of at least 12 months upon delivery under the condition, that it is stored in factory-packed containers and protected against extreme weather conditions, particularly against heat and moisture.

Performance

TEGOSTAB® B 4690 is primarily used as a cell regulator in formulations for high resilient polyurethane foams which are based on the reaction of high molecular weight, highly reactive polyols (molecular weight e. g. 4 500 – 7 000) with isocyanate being predominantly MDI, or MDI/TDI where TDI is less than about 30%. Such formulations are normally self-supporting, i. e. they require no or very little bulk stabilisation from a foam surfactant. They do, however, require an appropriate additive in order to prevent structure defects such as coarse cells and cavities which otherwise would occur, particularly in the subsurface areas.

TEGOSTAB® B 4690 combines a highly effective cell regulating and a low-medium stabilising effect. Therefore, its use is of special advantage whenever formulations have an increased tendency to generate disturbed cell structures close to the surface or even tend to be slightly instable. This may be caused by a relatively strong blowing reaction or a low level of crosslinker.

The performance of TEGOSTAB® B 4690 is illustrated in one MDI/TDI (80/20) based formulation given in Table 1.

Table 1: TEGOSTAB® B 4690 in hand pour foam

Component	pphp
Base Polyol (OH = 32 mg KOH/g)	70
Polymer Polyol (OH = 20 mg KOH/g, %SAN=40)	30
TEGOAMIN® DEOA 85	0,7
Water	3,0
TEGOAMIN® 33	0.32
TEGOAMIN® BDE	0.07
Cell opener	1,0
TEGOSTAB® B 4690	**0.9**
MDI/TDI (80/20), Index=97	46.0
Mould temperature, °C	60
Demould time, min	4
Release agent	GORAPUR® LK 149
Overall density, kg/m3	48
Surface/subsurface	Good
Cells/cm	13
Force-to-Crush* 1, N	920
Force-to-Crush 2, N	411
Force-to-Crush 10, N	172
Force-to-Crush 11, N	165

* 40 x 40 x 10 cm test block pressed 10 times to 50 % of its thickness using a standard 323 cm^2 indenter foot. Foam is then completely crushed and Force-to-Crush 11 measured.

Packaging

800 kg pallet (4 x 200 kg in steel drums)
1 000 kg plastic containers

Information concerning

- classification and labelling according to regulations for transport of chemicals
- protective measures for storage and handling
- measures in case of accidents and fires
- toxicity and ecological effects

is given in our material safety data sheets.

07/2010

Evonik Industries AG Goldschmidtstraße 100 45127 Essen/Germany
Phone +49 201 173-2466, Fax +49 201 173-1991
polyurethane@evonik.com, www.evonik.com/polyurethane-additives