Niax* catalyst A-300

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Description

Niax catalyst A-300 can help in the production of your molded polyurethane foams. This liquid, water-soluble tertiary amine composition promotes the gelation reaction during the production process. But all resemblance to other catalysts ends with the Niax catalyst A-300's unique delayed-action enhancement. Niax catalyst A-300 and Niax catalyst A-400 belong to a new class of delayed-action catalysts that jump-start the efficiency of your operation by delaying the reaction while producing substantially more open foam.

Niax catalyst A-300 is the better-flow choice for automotive and upholstered furniture applications. This performance-oriented catalyst readily adapts to your operation: add the Niax catalyst A-300 as a separate stream or blend it with water or polyol for metering to the mixing head of the machine.

Key Features and Benefits

Niax catalyst A-300 delivers added value with performance features that include:

- Improved flow in the mold for
– Easier production of complex parts
– Density reduction of 1-5%
- Considerable reduction in force-to-crush, signifying enhanced production of open foam when compared with competitive delayed-action catalysts
- Much lower amine fugitivity
- Far less corrosive to mild steel

Typical Physical Properties

Specific Gravity at 25°C	1.108
Viscosity at 25°C, cP	9.6
Solubility in Water at 20°C	Complete

(1) ASTM Test Method D93

Potential Applications

Niax catalyst A-300 is a targeted catalyst for use in the production of a wide variety of automotive seating and worldwide contact upholstered furniture. Excellent flow in the mold performance and other unique features also make the Niax catalyst A-300 very suitable for a wide variety of automotive interior parts applications. Please note that:

- The activity of Niax catalyst A-300 is similar to that of Niax catalyst A-33
- The Niax catalyst A-300's delayed action feature is particularly useful with MDI and TDI/MDI blends
- In a typical molded-foam application, the delayed gel provided by Niax catalyst A-300 should be used in combination with a blowing catalyst such as Niax catalyst A-1.

Processing Recommendations

Table 1 shows the performance of Niax catalyst A-300 in a typical MDI formulation and clearly illustrates the Niax catalyst A-300 details that make the difference:

- Niax catalyst A-300 yields more open foam than competitive delayed-action gel catalysts
- The flow is significantly better than that of competitive products
- Of considerable importance is the 56% reduction in the force-to-crush at low index while preserving cure (as shown by the hot ILD values)
- In the maze mold, Niax catalyst A-300's improved flow benefits allow a reduction in the minimum weight to fill the mold, resulting in a density reduction across the index range

Table: 1 Performance of Niax catalyst A-300 in Molded Foam

MDI FORMULATION, NCO = 29.4		php	
Components		A	B
Polyol OH# 28		100.0	100.0
Water		3.8	3.8
Niax catalyst A-1		0.2	0.2
Niax catalyst A-300		0.8	-
Competitive Catalyst		–	0.8
Diisopropanolamine		2.0	2.0
Niax Silicone Surfactant Y-10366 (RS-171)		1.0	1.0
FOAM PROPERTIES[1, 2]			
Square Mold			
MDI Index	80	80	
Foam Weight, g	402	400	
F.T.C., N	376	850	
Hot ILD, N	202	192	
Exit Time, Sec	47	48	
Maze Mold			
MDI Index	80	80	
Minimum Weight to fill, g	410	419	
Flowability	Good	Subsurface Collapse	
Shrinkage	Slight	Severe	
Maze Mold			
MDI Index	100	100	
Minimum Weight to Fill, g	372	395	
Exit Time, sec	49	46	

(1) F.T.C. is the force to indent at 50% an uncrushed cushion at 1 min. after demold.
(2) Hot ILD is the force to indent at 50% a crushed cushion at 3 min. after demold.

Patent Status

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