MOMENTIVE™

inventing possibilities

North Americas

Urethane Additives Guide

A Leader in Urethane Additives

Momentive Performance Materials offers one of the most trusted and diverse urethane additive (UA) product lines in the industry, ranging from a broad array of silicone stabilizers to a full portfolio of amine and metal based catalysts to a selection of organic-based property modifiers.

Developed in 1962, Niax* brand additives are essential ingredients in polyurethane foam used to meet customers' specialized processing and performance needs globally. Niax grades include a comprehensive line of silicones, catalysts and process modifiers for polyurethane foam production. Momentive also offers Geolite* modifiers to help flexible slabstock foam producers broaden their offering of foam grades, as well as Fomrez† organometallic tin catalysts.

Momentive is a pioneer in the polyurethanes market and continues to serve customers with leading innovations, creative solutions and excellent application expertise.

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†Fomrez is a trademark of Chemtura Corporation, used with permission by Galata Chemicals LLC.

Flexible Slabstock Foam - Surfactants

Niax* Silicones																
	Conventional							High Resilience	Polyester			Visco-Elastic				
	Low VOC Emissions	Wide Processing	Efficiency	Hydrolytic Stability	CO_2 Blown Foam	FR Property	MDI	General Purpose	General Purpose	FR Property	Cell Structure	Cell Opening	Pneumatic	MDI	TDI	
Niax Silicones																**Product Description**
L-540			M	•	•											General purpose, non-FR silicone surfactant
L-580			M	•	•											General purpose non-FR silicone surfactant
L-594Plus			M		•											Medium potency silicone for improved skin
L-595		•	H		•											High efficiency silicone surfactant for improved foam yield
L-895LV	•	•	H		•											Lower emission, lower viscosity, high efficiency silicone surfactant for improved foam yield
L-618			M			•						•		•	•	General purpose FR silicone surfactant
L-620		•	H			•										High efficiency silicone surfactant with broad processing latitude
L-635		•	H		•	•										High efficiency broad processing latitude FR silicone surfactant for CO_2 foam
L-650		•	M		•	•										Medium efficiency FR silicone surfactant, requiring least amount of flame retardant
L-655		•	M		•	•										Medium efficiency, fine cell FR silicone surfactant, requiring least amount of flame retardant
L-670		•	M		•	•										Silicone surfactant for foams made with natural oil-based polyols
L-818	•		M			•								•	•	Lower emission, general purpose FR silicone with wide processing latitude
L-820	•	•	H			•										Lower emission, wide processing latitude, high efficiency, FR surfactant
L-850	•	•	M		•	•										Lower emission, medium efficiency, FR silicone surfactant requiring least amount of flame retardant
L-855	•	•	M		•	•										Lower emission, medium efficiency, fine cell, FR silicone surfactant requiring least amount of flame retardant
L-858	•	•	L		•											Lower emission, low potency, wide processing latitude surfactant
L-895	•	•	H		•											Lower emission, high efficiency, silicone surfactant for improved foam yield
Y-10954		•	H			•										High efficiency silicone surfactant with broad processing latitude, recommended for use with CO_2 polyols
U-2000								•								General purpose HR surfactant, wide processing
L-2100								•								General purpose, HR surfactant, wide processing
L-3684	•							•								Lower emission, general purpose HR silicone surfactant
L-3685	•							•								Lower emission, general purpose HR surfactant. wide processing
L-500								•								Co-surfactant for improved cold flow in HR foams
SE-232									•		R					Universal ester silicone surfactant
L-530									•		F					Universal ester silicone surfactant
L-537XF											F	•				Fine cell silicone surfactant for polyester foam
L-553NPF									•		F					Ester silicone surfactant that promotes fine cells, low fogging, formulated without nonyl phenol
B-320NPF									•		R					Silicone surfactant for polyester foam, formulated without nonyl phenol
B-325NPF									•		R					Silicone surfactant for polyester foam, formulated without nonyl phenol
B-350NPF									•		R					Silicone surfactant for polyester foam, formulated without nonyl phenol
ES-1058	•															Organic surfactant for medium to high density polyester foam; promotes cell opening
M-66-82NPF	•									•	R					Organic surfactant. Die-cuttable and FR ester foams of medium-to-high density, formulated without nonyl phenol
L-417													•	•		Lower emission, fine cell structure, excellent mechanical properties
L-420							•									Lower emission, MDI, supersoft, open foam, silky feel
L-626												•				Cell opening silicone surfactant for visco-elastic foam
L-629	•											•				Lower emission specialty silicone surfactant for visco-elastic foams
L-629LV	•											•				Lower emission, low viscosity specialty silicone for visco-elastic foams
L-636S				•												Silicone surfactant for low air permeable polyether foam
L-645FL		•	M		•	•										Medium efficiency, FR silicone surfactant for flame laminated foams for improved bond strength

VE = visco-elastic foam, **VOC** = volatile organic compound, **FR** = flame retardant, **HR** = high resilience, **M** = medium, **H** = high, **L** = low, **R** = regular, **C** = coarse, **F** = fine
Note: Low Emission or Low VOC Emission is based upon tests showing less than 1000ppm.
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Flexible Slabstock Foam - Catalysts

Niax* Catalysts									
	Conventional Foam				High Resilience Foam				
	Blow	Balanced	Gel	Low VOC Emissions	Blow	Balanced	Gel	Low VOC Emissions	
Niax Catalysts									**Product Description**
A-1	•				•				Standard blow catalyst
A-107	•				•				Delayed action catalyst
A-133	•				•				Reduced dilution of A-1 for ease of metering
A-230		•				•			Balanced catalyst for continuous and discontinuous foaming process
A-237		•				•			Balanced catalyst for continuous and discontinuous foaming process
A-33			•				•		Standard gel catalyst
C-247			•				•		Delayed action gel catalyst
EF-100	•	•			•	•		•	Low emission, reactive blow catalyst
EF-600		•	•			•	•		Low emission gel catalyst
EF-700	•	•		•	•	•		•	Low emission blow catalyst
EF-750			•	•			•	•	Low emission gel catalyst
Stannous Octoate			•				•		Stannous octoate
SUL-4							•		Dibutyltin dilaurate

Note: Low Emission or Low VOC Emission is based upon tests showing less than 1000ppm.

Flexible Slabstock Foam - Processing Additives

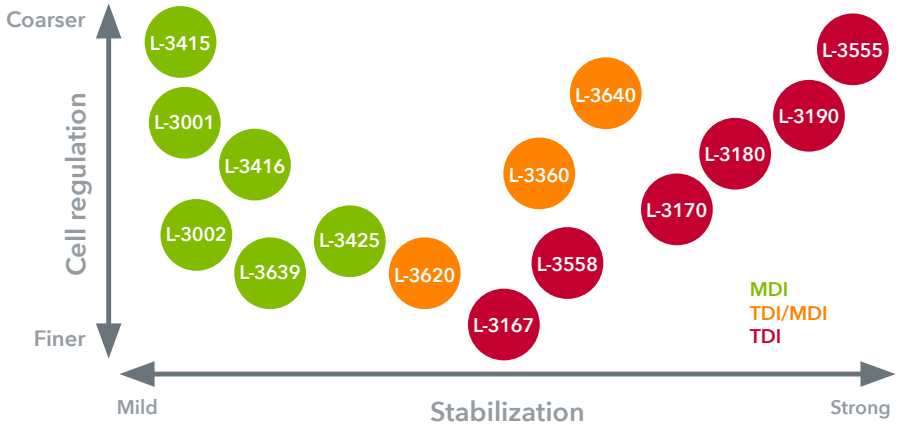
Geolite* Modifiers and Niax Additives	
Geolite Modifiers	**Product Description**
GM-206	Chemical stabilizer for low index foam
GM-210	Chemical stabilizer for low index foam with enhanced softening
GM-91	Processing aid additive, can promote the production of quality foam with critical formulations, reduce properties gradients
Niax Additive	**Product Description**
DP-1022	Processing aid additive, can improve mechanical properties in filled foams and high resilience foams
Niax Other Additives	**Product Description**
Color Stabilizer CS-15	Antioxidant for low density polyether foam
Color Stabilizer CS-16	Antioxidant for polyether foam with improved UV yellowing properties
Color Stabilizer CS-22LF	Low emission antioxidant with no added phenol; can improve light stability and enhance flame lamination properties
Color Stabilizer CS-26LF	Low emission additive with no added phenol; for improved bond strength for flame lamination ether foams
Flame Lamination Additive FLE-200LF	Latest generation flame lamination additive; no added phenol
Flame Lamination Additive FLE-500LF	Low emission additive with no added phenol; for flame lamination with thermal discoloration protection, and offering improved bond strength
Antistat AT-35	Antistatic additive for conventional flexible foam
Black 450HP	Color for polyester and polyether foam
DCF	Additive for improved clickability and foam recovery after compression in polyester foam
FRT	Flame retardant for polyurethane slabstock foam

Molded Foam - Surfactants

Niax* Silicones						
	Low VOC Emissions	HR TDI	HR TM	HR MT	HR MDI	
Niax Silicones						**Product Description**
L-3001				•	•	High cell opening silicone surfactant
L-3111				•	•	High cell opening silicone surfactant
L-3415	•			•	•	High cell opening silicone surfactant; low VOC emissions
L-3002				•	•	Medium cell opening silicone surfactant
L-3222				•	•	Medium cell opening silicone surfactant
L-3416	•			•	•	Medium cell opening silicone surfactant; low VOC emissions
L-3417	•			•	•	Stabilizing silicone surfactant; low VOC emissions
L-3639	•			•	•	Very low emission silicone surfactant for MDI foams
L-3425	•			•	•	Very low emission silicone surfactant for high density MDI foams
Y-10366J		•	•			High efficiency balanced silicone surfactant
L-3620	•		•			Low potency, low fogging silicone surfactant for TM20 technology
L-3640	•	•	•			High efficiency, low fogging silicone surfactant for TM20 technology
L-3170		•				High efficiency balanced silicone surfactant
L-3180	•	•	•			Low emission, high efficiency balanced silicone surfactant for TDI and TDI/MDI blends
L-3190	•	•	•			Low emission, high efficiency balanced silicone surfactant for TDI and TDI/MDI blends
L-3360		•	•			High efficiency balanced silicone surfactant
L-3555	•	•				High stability silicone surfactant; low VOC emissions
L-3556S	•	•	•			Very low emission silicone surfactant for TDI and TDI/MDI blends
L-3558	•	•	•			Low emission, cell regulating silicone for TDI and TDI/MDI blends
L-3167		•	•			Cell regulator; co-silicone surfactant for TDI
L-5309J		•	•			High efficiency balanced silicone

TDI = toluene diisocyanate, **MDI** = methylene diphenyl diisocyanate, **HR** = High resilience, **TM20** = 80% TDI + 20% MDI system, **TM** = blend of TDI and **MDI** (TDI>50%) and **MT** = blend of MDI and TDI (MDI>50%)

Relative Performance of Niax* Silicone Surfactants in Molded Foams



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Molded Foam - Catalysts

Niax* Catalysts				
	Blow Amine Catalyst	Balanced Amine Catalyst	Gel Amine Catalyst	
Niax Catalysts				**Product Description, Potential Applications and Typical Benefits**
A-1	•			Standard blow catalyst
A-107	•			Delayed action blow catalyst
A-400	•			Delayed action load building (TDI); cell opening blow catalyst; improved flowability (MDI)
A-440	•			Delayed action load building (TDI); cell opening blow catalyst; improved flowability (MDI)
A-4	•			Catalyst for improved surface care
C-174	•			HR MDI blow catalyst
C-225		•		Balanced delayed action catalyst; enhanced curing
A-300			•	Delayed action gel catalyst; improved load building and cell opening
A-305			•	Delayed action gel catalyst; improved load building and cell opening
A-33			•	Standard gel catalyst
EF-100	•			Low emission blow catalyst
EF-600			•	Low emission gel catalyst
EF-602			•	Low emission delayed catalyst; predominately gel
EF-680			•	Low emission gel catalyst

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Rigid Foams - Systems

Niax* Silicones								
	k-factor	Blowing Agent Solubility	HFO Shelf Life	Foam flow/density distribution	Surface Quality	FR Properties	Dimensional Stability	Key Performance Benefit
PIR/PUR System Applications								
Y-16130	●●●	●●●●	●●●●	●●●●	●●●	●●	●●	Low k-factor combined with excellent acid resistance and good flow, for pentane and HFO/HC blowing agents
L-6895	●●●	●●●	●●●	●●●●	●●●	●●	●●●	High polyol/blowing agent compatibility silicone for significantly reduced voids at the end of flow. Excellent candidate for water heater, discontinuous panels, or fast reactivity refrigeration formulations
L-6988	●●●●	●●●	●●●	●●●	●●●	●●	●●	Excellent k-factor in hydrocarbon systems and excellent froth shear stability thus reducing void formation near injection location
L-6972	●●●●	●●●	●●●●	●●●	●●●	●●	●●	Balanced HFO surfactant that provides good k-factor, flow, and blowing agent solubility
L-6620	●●●●	●●	●●●	●●	●●	●●	●●	Surfactant designed for improved k-factor in appliance formulations with CP or HFO
L-6978	●●●●	●●	●●	●●●	●●●	●●	●●●	Surfactant for HFO or HFO co-blown with c-pentane for improved k factore while maintaining surface quality and flow
L-6884	●●●	●●●●	●●●	●●	●●	●●●	●●●	Lower density and improved flow in sucrose based polyol systems, can improve polyol/blowing agent compatibility
L-6915	●●●	●●●	●●●	●●	●●●	●●	●●	Highly stabilizing surfactant for slow reactivity systems
L-5440	●●	●●●	●●	●●●●	●●●	●●	●●●	Improved flow and dimensional stability, excellent polyol compatibility
L-6889	●●	●●●●	●●	●●●●	●●●	●●●	●●●●	Very high polyol-pentane solubility for best blend stability, good flow and void reduction
L-6642	●●●	●●	●●●●	●●●	●●●●	●	●●	Improves shelf life and first choice for formic acid blown formulations, good flow and void reduction
L-6900	●●●	●●●	●●●	●●	●●●	●●	●●	Industry standard for low k-factor and good flow
L-6100	●	●●●	●	●●	●●	●●●●	●●●●	Can produce foams with good dimensional stability and improved fire properties, good liquid flow and leveling
L-6891	●●●	●●●	●●●	●●●	●●●	●●	●●	High polyol/pentane solubility - very low lambda value foam and voids reduction, for discontinuous applications especially refrigerators
L-6635	●●	●	●●●	●●●●	●●●●	●	●●●	Premium grade silicone to reduce foam voids and achieve excellent surface quality in metal faced panels PUR and PIR
L-6638	●●●	●●	●●●	●●●●	●●●●	●	●●●●	High performance void reduction silicone with improved polyol compatibility
L-5420	●●	●●●	●●	●●	●●	●●●●	●●●	Improves dimensional stability and FR for spray and panels application with various water/co-blown technologies
L-6633	●●●	●●●	●●●	●●●	●●●	●●	●●●	Good foam stabilization, polyol compatibility, and can reduce void formation
L-6630	●●	●	●●●	●●●	●●●●	●	●●●	A-side compatible surfactant with the ability to improve surface quality and flow
L-5345	●●	●	●●●	●●●	●●●	●	●●●●	Standard general purpose A-side surfactant for enhanced mixing

NCO = Isocyanate, **PU** = Polyurethane, **1K/OCF** = 1 Component foam, **HFC** = Hydro Fluoro Carbon, **PIR** = Polyisocyanurate, **PUR** = Polyurethane, **APP** = Aromatic Polyester Polyols

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Rigid Foams - Applications

Niax* Silicones									
	Appliance	Discontinuous Panels	Non-FR Rated Discontinuous Applications	FR Rated Discontinues Applications	FR Rated PUR Continuous Metal Panels	PIR Continuous Metal Panels	One Component Foam	Closed Cell Spray Foam	Isocyanate Compatible Surfactant
PIR/PUR System Applications									
Y-16130	•	•							
L-6895	•	•	•						
L-6988	•	•							
L-6972	•	•	•					•	
L-6620	•		•			•			
L-6978	•		•						
L-6884	•	•	•	•					
L-6915		•	•			•			
L-5440		•	•	•	•				
L-6889		•	•						
L-6642		•	•			•			
L-6900	•	•	•			•		•	
L-6100		•		•	•			•	
L-6891	•	•	•						
L-6635			•			•			•
L-6638						•			•
L-5420		•		•	•			•	
L-6633		•	•			•			
L-6630		•	•			•	•		•
L-5345		•	•				•		•

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Rigid Foams - Construction

Niax Silicones								
	K-factor	Cell Stabilization	Cell Opening	FR Properties	Processing Window	Surface Quality	Yield	Key Performance Benefit
Open Cell Spray Foam								
L-5388	●●●●	●●●●	●	●●	●●●	●●●	●●●	Excellent foam cell structure and foam stability, may need a cell opening additive. May be used at lower use levels.
L-6189	●●●	●●●	●●●	●●●	●●●●	●●	●●●	First choice for OCX formulations, can improve formulation compatibility and shelf-life
L-6186	●●	●	●●●●	●●	●●		●●	Excellent cell opening at medium-low density, good polyol compatibility, may require co-surfactant
L-6188	●●	●	●●●●	●●	●●	●●●	●●	Excellent cell opening at medium up to very high density, may require co-surfactant, good polyol compatibility
L-6164	●●		●●●●					Unique foam cell opener that provides very fine cell structure, may require co-surfactant stabilizer. First choice in any packed foam
L-6630	●●●	●●●	●●	●●	●●●	●●●	●●●	Balanced foam stabilizer for open cell foam with fine cell structure
Y-16312	●●●	●●●●	●●	●●	●●●	●●●●	●●●●	Surfactant for improved yield and processing
	K-factor	Pentane Emulsification	Flow/Flatness	Compressive Strength	Surface Quality	Pentane Emulsion Stability	Pentane Isomer	Key Performance Benefit
PIR Flex Face								
L-5111	●●●●	●●●	●●	●	●●	●	c	Fine cells with mainly cyclo-pentane blowing agents - for PIR/PUR boardstock
L-5112	●●●	●●●●	●●	●●	●●●	●●	n/i/c	Improves mixing quality and emulsification of pentane up to high usage level of iso-pentane, improved foam quality and yield, and reduced laydown defects
L-5162	●●●	●●●	●●●	●●●	●●●	●●	n/i	Broad processing window silicone with good compatibility and flow in PIR formulations
L-5466	●●●	●●●	●●●	●●●	●●●●	●●●	n/i/c	Strong nucleation and stabilization can reduce surface voids when using gas-tight facings, helps compatibility with APP's
L-5140	●●●	●●●●	●●●	●●	●●●	●●●●	n/i	Strong emulsification power, for n- and iso- pentane, can significantly improve compatibility with APP's
Y-16321	●●●●	●●●	●●	●	●●	●	n/i/c	Provides excellent k-factor with all pentane isomers

c = cyclo-pentane, **i** = iso-pentane, **n** = n-pentane
Note: PIR = Polyisocyanurate, OCX = ICC-ES AC 377 Appendix X Spray Foam Formulations

Rigid Foams - Catalyst and Special Additives

Niax* Catalysts and Special Additives									
	PUR discontinuous	PIR discontinuous panels	PUR continuous lamination and block	PIR continuous lamination and block	PUR / PIR discontinuous block	Spray	Water blown PUR and PIR foam	Packaging, open cells foam	
Niax Catalysts									**Product Description, Potential Applications and Typical Benefits**
A-1	•	•	•	•	•	•	•	•	Very effective blowing catalyst, promote selectively water-NCO reactions, can improve foam flow and rate of expansion
C-5	•		•	•		•			General purpose blowing catalyst
C-8	•	•	•		•	•	•	•	General purpose PUR catalyst
BDMA	•	•	•		•	•	•	•	Dimethylbenzylamine, weak gel catalyst, can reduce surface friability and can improve foam adhesion in particular with mainly water-blown foams
DMEA	•		•		•	•			Moderate odour, typically cost-effective, reactive catalyst
DMEE	•	•					•	•	Moderate odour, typically cost-effective, reactive catalyst, more blowing efficiency compared to DMEA
DMDEE	•	•			•	•		•	Moderate activity blow catalyst, excellent storage stability also in isocyanate and prepolymers, 1K/OCF foams
C-27	•	•	•	•		•	•	•	Low odor catalyst offering improved shelf life for water co-blown systems
C-31	•	•	•	•			•		Delayed action catalyst for PIR and PUR, improved green strength and surface curing, reduced post expansion in thick panels
C-41	•	•	•	•		•			Strong gel catalyst promoting both PUR and PIR reaction, promote fast crosslining promotion, reduced demould time and improved foam adhesion
A-107	•				•		•		Acid blocked delayed action blow catalyst
C-10			•	•	•	•	•	•	Reactive amine catalyst, ideal for spray and open-cell applications. Blowing catalyst giving a smooth reaction profile, good candidate also in flexible moulded foams
C-15	•	•	•	•	•	•	•	•	Reactive amine catalyst, ideal for spray and open-cell applications. Balanced blow-urethane catalyst, good candidate also in flexible foams where it improves skin cure
Potassium Octoate	•			•	•				15% K containing PIR catalyst, also good as general purpose curing catalyst in PUR
K-ZERO G	•	•	•	•	•	•	•		3000 cPs Potassium Octoate catalyst that is formulated without glycol, contains 15% potassium. Can help improve flow, k-factor, adhesion, and processing
Potassium Acetate	•			•	•	•			15% K containing PIR catalyst
MC-710/MC-810						•		•	Bismuth based catalysts, exhibiting strong gel catalytic activity.
Niax Special Additives									**Product Description, Potential Applications and Typical Benefits**
RA-1		•		•			•		Can speed up foam hardening and adhesion without influencing gel time, in particular for PIR foam made with aromatic polyester polyols
AP-01	•	•	•	•			•		Adhesion promoter additives, reduced surface friability in high water and/or high index formulations

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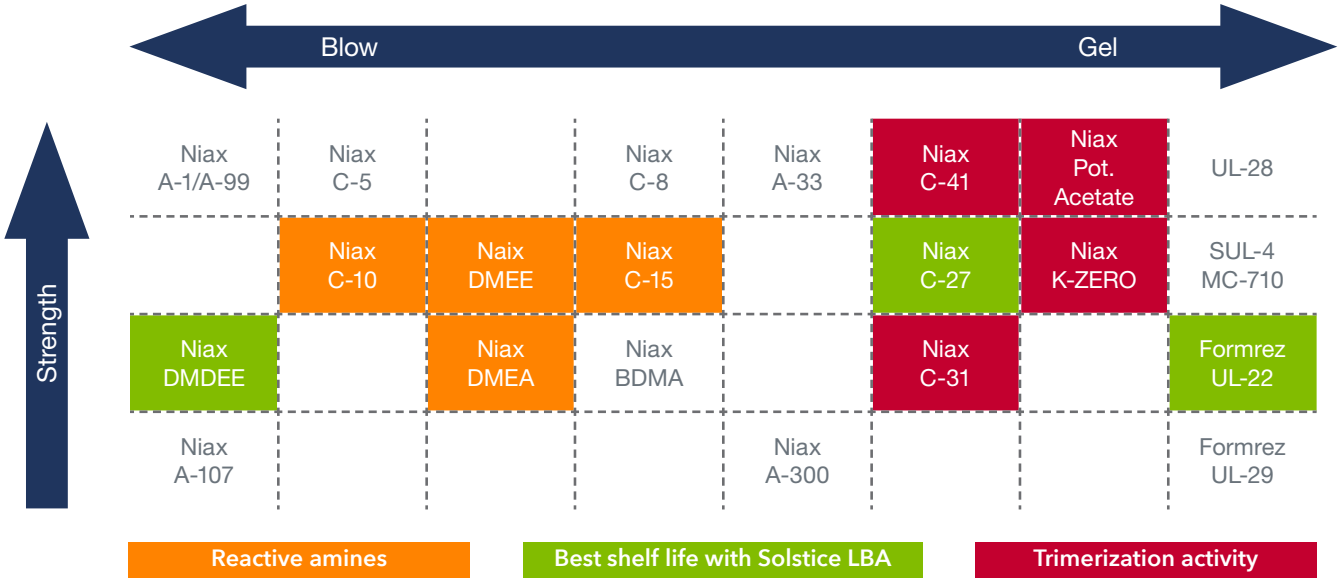
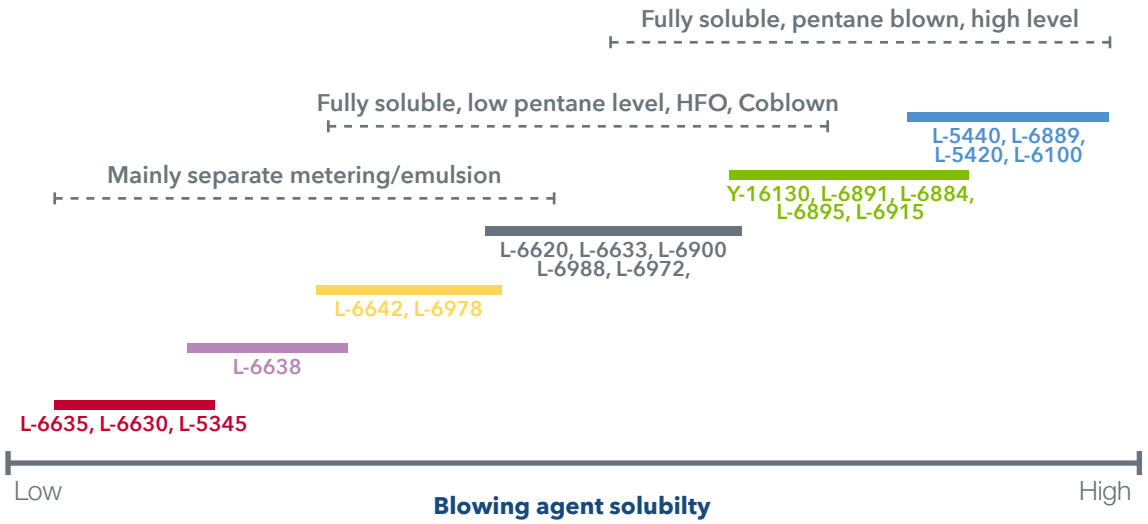
Niax* Catalysts for Rigid Foams Applications



Relative Scale of Niax* Silicone Contribution to Blowing Agent Solubility in Rigid Foam System Applications



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Specialty Applications - Surfactants + Catalysts

Niax* Silicone and Modifiers							
	Microcellular (Polyether)	Microcellular (Polyester)	SRIM/Composite	Integral Skin Foam	PU Leather/Coatings	Mechanical Froth	
Niax Silicones							**Product Description, Potential Applications and Typical Benefits**
L-1000			•	•			Resin-side nucleation surfactant for one-shot elastomer systems
L-1500	•	•		•			Standard surfactant for microcellular systems
L-1501		•		•			Wide-processing latitude with excellent open cell for low-medium density systems
L-1507	•	•					For low-density polyester or polyether-based microcellular systems with excellent emulsification
L-1541		•	•				For high-density polyester-based microcellular systems with thick skin and SRIM applications
L-5302	•		•	•			Medium stabilizing surfactant for integral skin and high-density polyether-based microcellular systems
L-1111					•		Promotes adhesion between organic and inorganic in water, solvent based PU coat and acrylic coating application, Epoxy functional group
L-1128					•		Low surface tension silicone for Dry process PU Leather Coating, stable in pH 4-10, provides excellent wetting, leveling and dispersion
L-1160					•		Linear reactive silicone, enhanced anti-sticking property, good solubility in PU system. Improved leveling in coating application
L-1169					•		Hydrophobic additive, for enhanced anit-sticking anti-abrasion properties. Good solubility in PU systems. Reacts into PU Matrix
L-5614						•	Industry-standard surfactant for the mechanically frothed foam process
L-5617						•	Zero VOC surfactant analog of L-5614 used in the mechanically frothed foam processes
L-5639						•	A low VOC mechanical froth surfactant, non-hydrolysable, provides high closed cell content for reduced froth density and shear induced cell collapse
L-5690						•	Co-surfactant for enhanced froth stability and reduced froth stability and reduce foam density when used with standard mechanical froth surfactants

Specialties Applications Catalysts											4=better		
	Microcellular/Shoe Sole	SRIM/Composite	Elastomers	Spray Elastomer	Integral Skin Foam	PU Leather/Coatings	Mechanical Froth		Urea Selectivity	Urethane Selectivity	Pot Life	Curing Speed	Hydrolysis Stability
Niax Catalysts								**Product Description, Potential Applications and Typical Benefits**					
A-100	•	•	•	•	•	•		TEDA Crystals		•	1	4	4
A-440	•	•			•		•	Delayed-action, blowing-selective amine catalyst developed for microcellular foams	•		2	2	4
A-533	•	•	•	•	•	•		Industry-standard TEDA catalyst in (mono)ethylene glycol		•	1	4	4
A-525	•		•	•				Industry-standard TEDA catalyst in BDO		•	1	4	4
A-535		•	•			•	•	Delayed-action gel catalyst for microcellular/SRIM/PUL applications		•	3	3	4
A-537	•	•	•		•			Delayed-action TEDA-based catalyst for open-mold pouring applications		•	3	2	4
A-575	•	•	•		•		•	DBU based Temperature-activated, delayed-action, powerful, gelling-selective catalyst		•	3	2	4
A-577		•	•		•			Delayed-action, powerful, gelling-selective catalyst		•	3	2	4
MC-710/810	•	•		•	•	•		Tin free metal based catalysts, strong gelling, can replace DBTDL		•	1	4	2
LC-5635		•				•	•	Heat activated catalyst Sn/Hg/Ni free.		•	4	1	2
LC-5636		•	•			•	•	Heat activated catalyst Sn/Hg/Ni free. Lower activation temperature compared to LC-5635		•	3	2	2
UL-29		•	•				•	Delayed action activity allows increased pot life, and improved cavity filling.		•	2	3	2

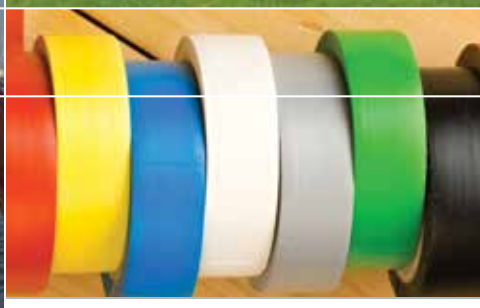
SRIM = structural reaction injection molding, **TEDA** = triethylenediamine

*Niax is a trademark of Momentive Performance Materials Inc.

Specialty Applications - Catalysts

Fomrez† Catalysts												
	Mechanical Froth	Microcellular (Polyether)	Microcellular (Polyester)	Low Density SRIM	High Density SRIM	One-Shot Elastomer	Cast Elastomer	Spray Elastomer	Spray Foam	Molded Foam	Coatings	Product Description, Potential Applications and Typical Benefits
Fomrez Tin Catalysts												
UL-1						•	•	•	•	•		Key catalyst for PU foam systems
UL-22									•			PU foam (including spray) systems
UL-28						•		•	•		•	Elastomer (including spray) systems; RTV silicones
UL-29	•	•	•	•	•	•	•	•	•	•	•	Microcellular and mechanically frothed foam, elastomer and spray (long pot life) systems
UL-32		•	•		•				•	•		PU foam (especially microcellular) systems
UL-38		•	•		•	•		•			•	Elastomer and microcellular systems
UL-50						•		•			•	Elastomer (including spray) systems; RTV silicones
UL-54							•	•	•		•	Microcellular foam, elastomer and spray systems
UL-59	•	•	•		•	•		•			•	Mechanically frothed foam, microcellular foam, elastomer, and spray systems
UL-6	•	•	•		•	•	•	•	•	•	•	Microcellular and mechanically frothed foam, elastomer and spray (long pot-life) systems
SUL-4						•		•	•		•	Key catalyst for elastomers, foams and RTV silicones
SUL-11C						•			•		•	Elastomer, RTV silicones, esterification catalyst

RTV = room temperature vulcanization



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