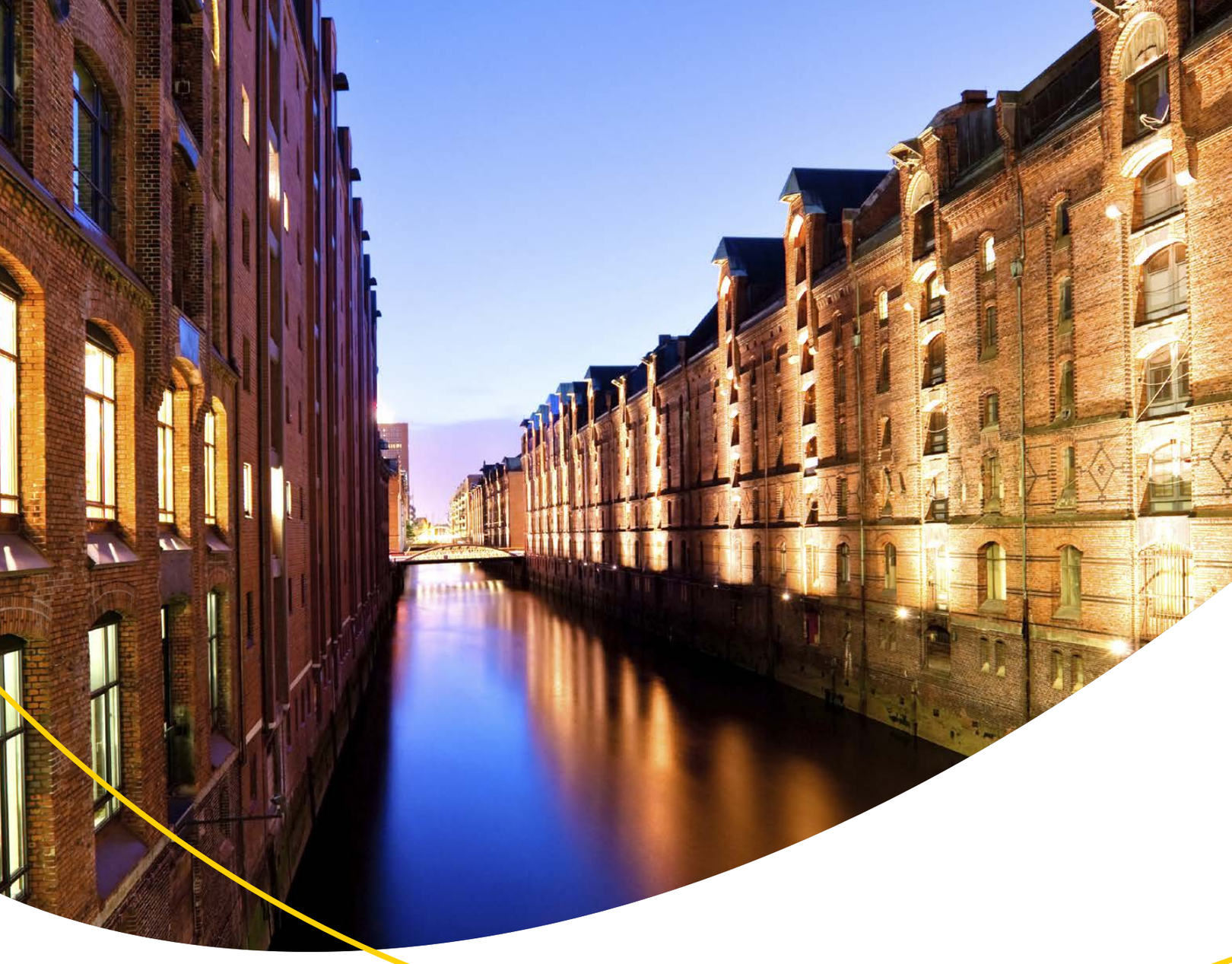


Polyurethane Additives Guide

Europe, Middle East and Africa

AIR PRODUCTS

About Us

Air Products touches the lives of consumers around the globe in positive ways every day. The company is recognised for its innovative culture, operational excellence and commitment to safety and the environment. Our aim at Air Products is to develop lasting relationships with our customer and communities based on human qualities: an understanding of their needs, integrity and honesty in the way we do business, and a passion for exceeding expectations.

Air Products Today

- More than 20,000 employees around the world
- Operations in more than 50 countries

Sustainability at Air Products . . . providing innovative solutions through deeply rooted values.

Our people, offerings, and the markets in which we work position us to understand and gain knowledge about many of the world's most pressing social and environmental challenges. Delivering unique solutions to these challenges has become an increasingly important driver of profitable growth and our reputation as a global gases and chemicals company.

At the heart of Air Products is a set of real values. Values that say we will work to protect our fellow human beings and the environment and be a positive influence for our communities and our world through our behaviours, offerings and operations.

Safety is paramount at Air Products

- We are consistently among the leaders in safety in the chemical industry
- Among industry leaders in environmental, health and safety (EH&S) performance
- Every employee is required to understand and adhere to our global EH&S policy. It's a condition of employment

Polyurethane Additives

Air Products is a global leader in polyurethane additives, offering the broadest range of catalysts and surfactants for all types of polyurethane foam.

We work closely with our customers, so we continually stay abreast of the latest trends and issues affecting the polyurethane markets. This enables us to proactively develop innovative products to answer changing market demands.

With manufacturing sites and laboratories spanning the globe, we are well positioned to serve your needs, now and in the future.

Contents

Formulating for the

FUTURE

Construction panels utilise rigid polyurethane foam because of its superior insulating and mechanical properties to reduce energy consumption and enhance structural integrity of the finished product.

CATALYSTS

	Blow	Balanced	Gel	Delayed Action	Surface Cure	Low odour	Improved Cure	Improved Foam Flow	Improved Liquid Flow	Co-catalyst	Trimerisation Catalyst	Smooth Rise Profile	Improved Edge Cure	Improved Foam Flow	Improved Liquid Flow
	PUR Foams									PIR Foams					
Dabco® K-15										•					
Dabco K2097							•			•					
Dabco TMR										•	•		•		
Dabco TMR-2							•			•		•			
Dabco TMR-3				•			•			•		•			
Dabco TMR-7										•	•	•	•		
Dabco TMR-13										•	•		•		
Dabco TMR-31							•			•	•				
Polycat® 5	•							•		•				•	
Polycat 8			•												
Polycat 9			•			•				•					
Polycat 34			•			•				•					
Polycat 36		•								•		•	•		
Polycat 41			•		•		•		•	•		•	•		•
Polycat 520	•							•		•				•	

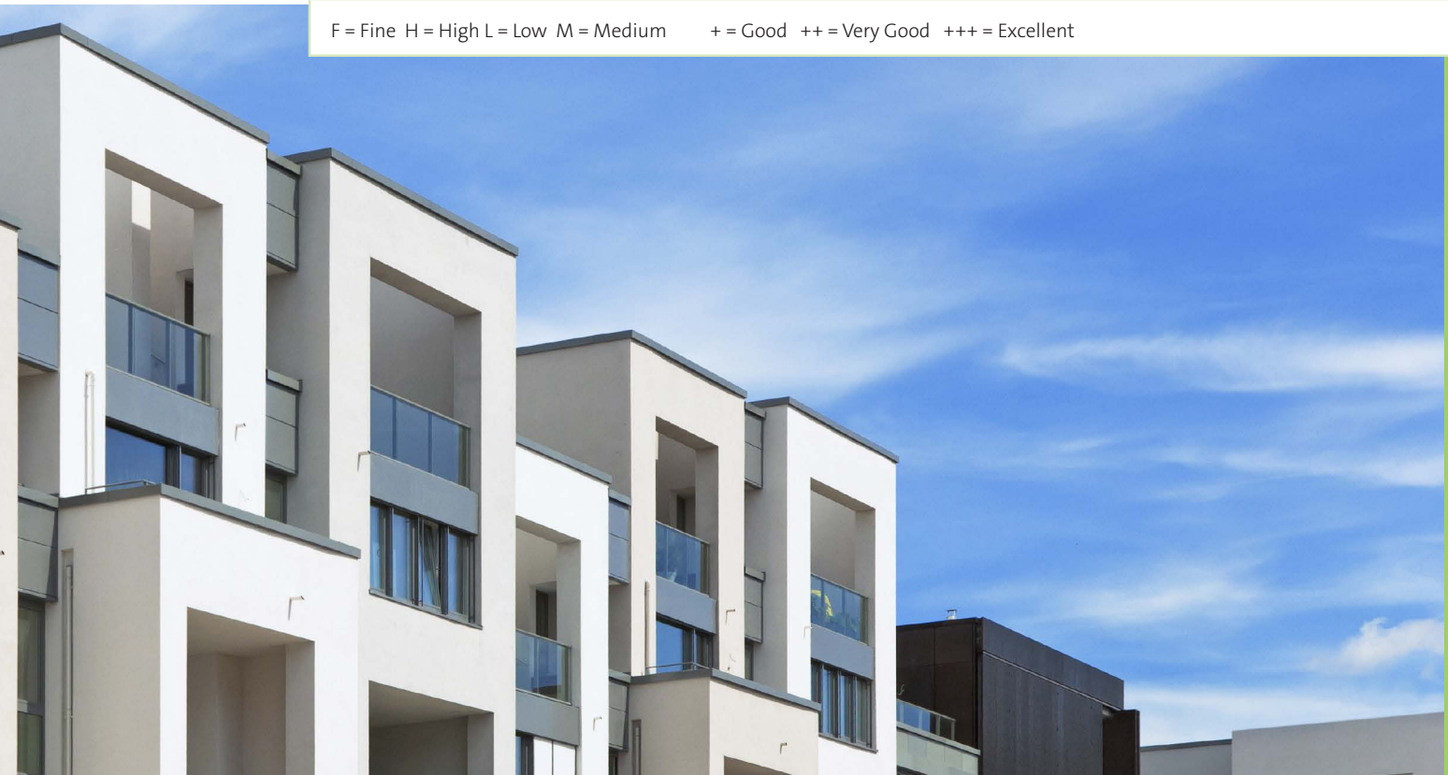
Rigid Lamination/Bunstock

Additives can play a fundamental role in achieving the performance required from your polyurethane foam; they can help achieve improved thermal conductivity and appearance.

SURFACTANTS

	Cell Size	Efficiency	Emulsification	Foam Flowability	Liquid Flowability	FR Suitability	Reduced Voids	HFC Compatibility	Improved Dimensional Stability	Improved Thermal Conductivity
Dabco DC193	M	M/L	M	L	H	•		•	•	
Dabco DC5357	F	F	H	M	M	•		•		+
Dabco DC5588	F	H	L	H	L		•			+
Dabco DC5598	F	H	M	M/H	L		•			++
Dabco DC5604	M	M	M	M	M			•		
Dabco SI3201	F	H+	L	H	L		•			++
Dabco SI3202	M	M	H	M	M		•			+
Dabco SI3203	F/M	H	M	M/H	M		•		•	++
Dabco SI3501	F	VH	M	H	L		•			+++
Dabco SI3503	M	M/L	M	L	H	•		•	•	

F = Fine H = High L = Low M = Medium + = Good ++ = Very Good +++ = Excellent



Spray polyurethane foam insulation can be applied quickly and efficiently for a variety of applications including commercial, industrial, agricultural and residential insulation.

CATALYSTS

	Open/Closed Cell	Reduced Blue Haze Potential	Surface Cure	Low Odour	Long Shelf Life	Good Cure	Low Emission
Dabco Crystal	C	•			•	•	
Dabco MB20	C	•			•	•	
Dabco T-12	C	•				•	
Polycat 9	C	•		•			
Polycat 30	C		•		•		
Polycat 31	C	•					•
Polycat 34	C	•		•			
Polycat 140	O			•			•
Polycat 142	O			•			•

SURFACTANTS

Spray Foam

	Open/Closed Cell	Emulsification	Stabilisation	Improved Surface Appearance	Improved Adhesion	Improved Dimensional Stability	Improved Compression Strength	FR Suitability
Dabco DC193	C	+	+			●		●
Dabco DC197	C	+				●	●	
Dabco DC5350	O		+			●		
Dabco DC5604	C		+					
Dabco EM400	O	++						
Dabco SI3503	C	+	+			●		●
LK-221E®	C	+	-	●	●	●	●	
LK-443E®	C	++	--	●	●	●	●	

+ = Good ++ = Very Good +++ = Excellent - = Poor --= Very Poor

For its durability and comfort properties, polyurethane is commonly used in the manufacture of shoe soles.

Shoe Sole/Integral Skin/ Elastomers

CATALYSTS

	Shoe Sole (S), Integral Skin (I), or Foamed Elastomers (E)	Blow	Balanced	Gel	Delayed Action	Improved Foam Flow	Fast Demould	Surface Cure	Suitable for Polyether Foam	Suitable for Polyester Foam	Non Emissive
Dabco Crystal	S, I, E			++					•	•	
Dabco BL-11	S, I	•				•			•	•	
Dabco DC5-LE	I, E			++	•	•	•		•		•
Dabco EG	S, I			++						•	
Dabco 25S	S, I, E			++					•		
Dabco 1027	S, I, E			++	•	•	•			•	
Dabco 1028	S			++	•	•	•		•		
Dabco KTM60	E			++	•	•	•			•	
Dabco KTM70	I, E			+	•	•	•		•	•	
Dabco NE300	I, E	•				•			•	•	•
Dabco NE1070	I, E			+					•	•	•
Polycat 15	I, E		•					•	•	•	•
Polycat 77	I, E		•					•	•	•	
Polycat SA2LE	E			+	•	•			•	•	
Polycat SA-5	E			++			•		•	•	
Polycat SA-8	E				•				•	•	

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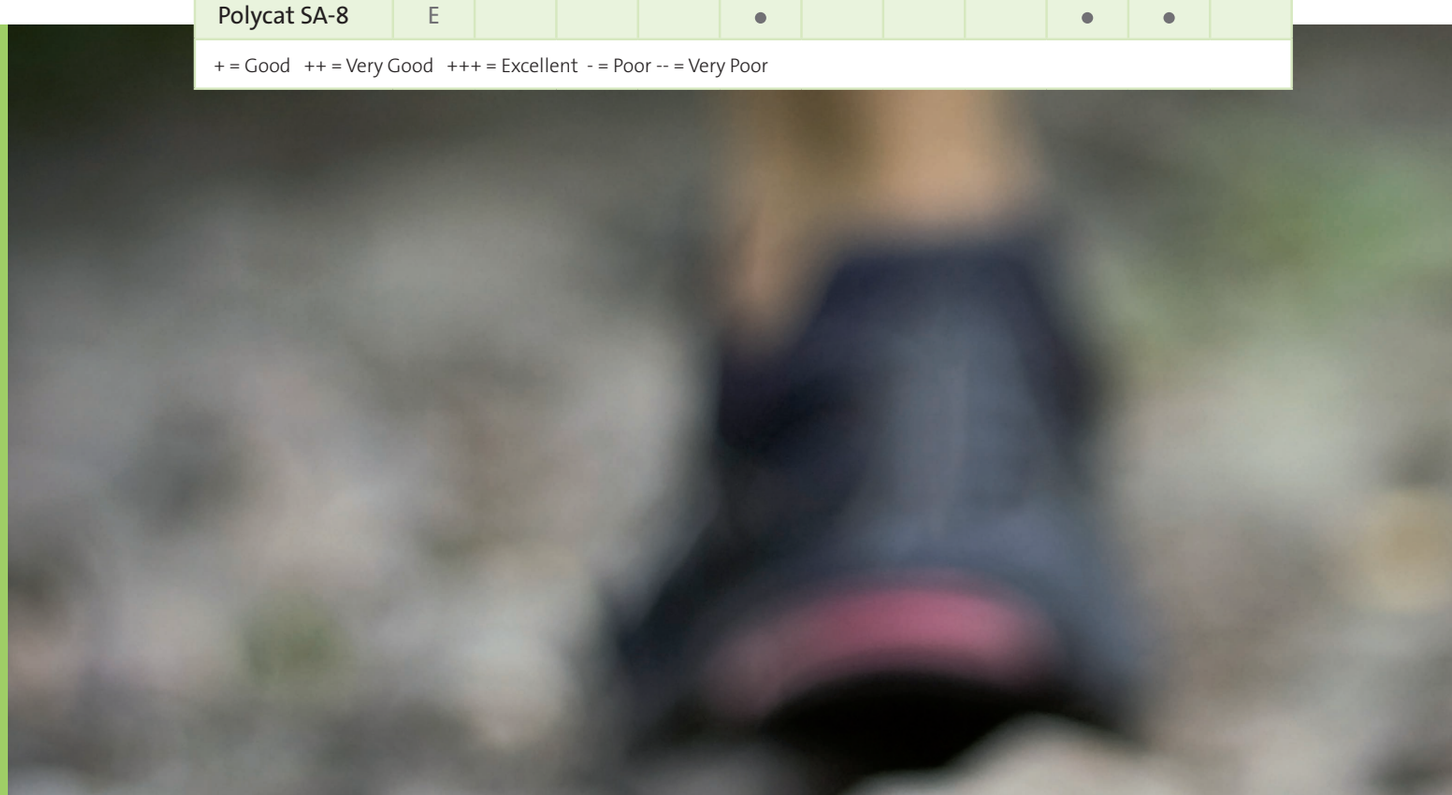


Shoe Sole/Integral Skin/ Elastomers

SURFACTANTS

	Shoe Sole (S), Integral Skin (I), or Foamed Elastomers (E)	Emulsifier	Stabiliser	Improved Dimensional Stability	Improved Surface Appearance	Low Fogging
Dabco DC193	S, I		•		•	
Dabco DC2525	I		•		•	•
Dabco DC3043	S, I		•	•	•	•
Dabco DC5160	S, I		•		•	
Dabco DC5179	S, I		•			
Dabco SI3503	S, I		•		•	
Dabco SI4202	S, I	•	•		•	
LK-221E	S, I, E	•		•		
LK-443E	S, I, E	•		•		

Polyurethane foam offers excellent insulating properties and can be injection-moulded into difficult shapes, making it the perfect choice for the manufacture of refrigerators and freezers.

CATALYSTS

Appliance

	Flowability	Cure	Gel	Delayed Action	Reduced Voids
Dabco BL-11	•				
Dabco TMR-2		++		+	
Dabco TMR-3		++		++	•
Dabco TMR-30		+	+		
Polycat 5	•				
Polycat 8			+		
Polycat 41		+	++		

+ = Good ++ = Very Good +++ = Excellent - = Poor -- = Very Poor

SURFACTANTS

Appliance

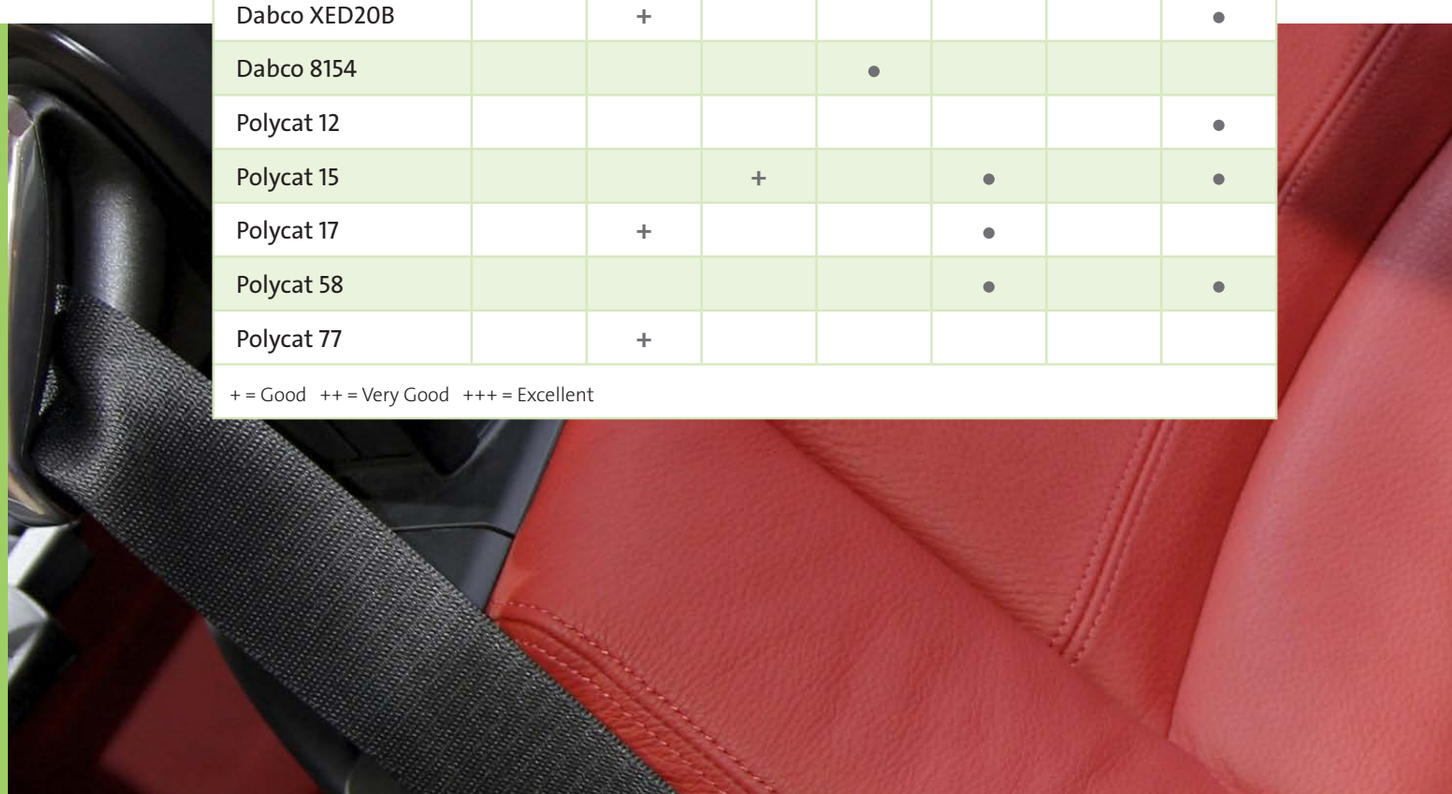
	Flowability	Improved Lambda	HFA	Hydro Carbons	Emulsifier	Stabiliser
Dabco DC5357	•	•	•		•	
Dabco DC5598	•	•		•	•	•
Dabco SI3101	•	•		•	•	•
Dabco SI3102	•	•		•	•	•
Dabco SI3201	•	•		•		•

Our latest RE (Reduced-Emission) and NE (Non-Emissive) products are developed to reduce total VOC and FOG emissions compared to conventional amine catalysts, resulting in lower exposure to both workers and consumers.

CATALYSTS

	Blow	Balanced	Gel	Delayed Action	None Fugitive	Reduced Emission	Surface Cure
Dabco 33LV			++				
Dabco BA100				•	•		
Dabco BA305					•		
Dabco BL-11	++						
Dabco BL-17	+			•			
Dabco DC-2			+++				
Dabco DC5-LE			++			•	
Dabco NE300	+				•		
Dabco NE1070			+		•		
Dabco NE1082			++		•		
Dabco NE1091			+++		•		
Dabco NE1095			++		•		
Dabco RE530			++			•	
Dabco T		+			•		
Dabco XED20B		+					•
Dabco 8154				•			
Polycat 12							•
Polycat 15			+		•		•
Polycat 17		+			•		
Polycat 58					•		•
Polycat 77		+					

+ = Good ++ = Very Good +++ = Excellent

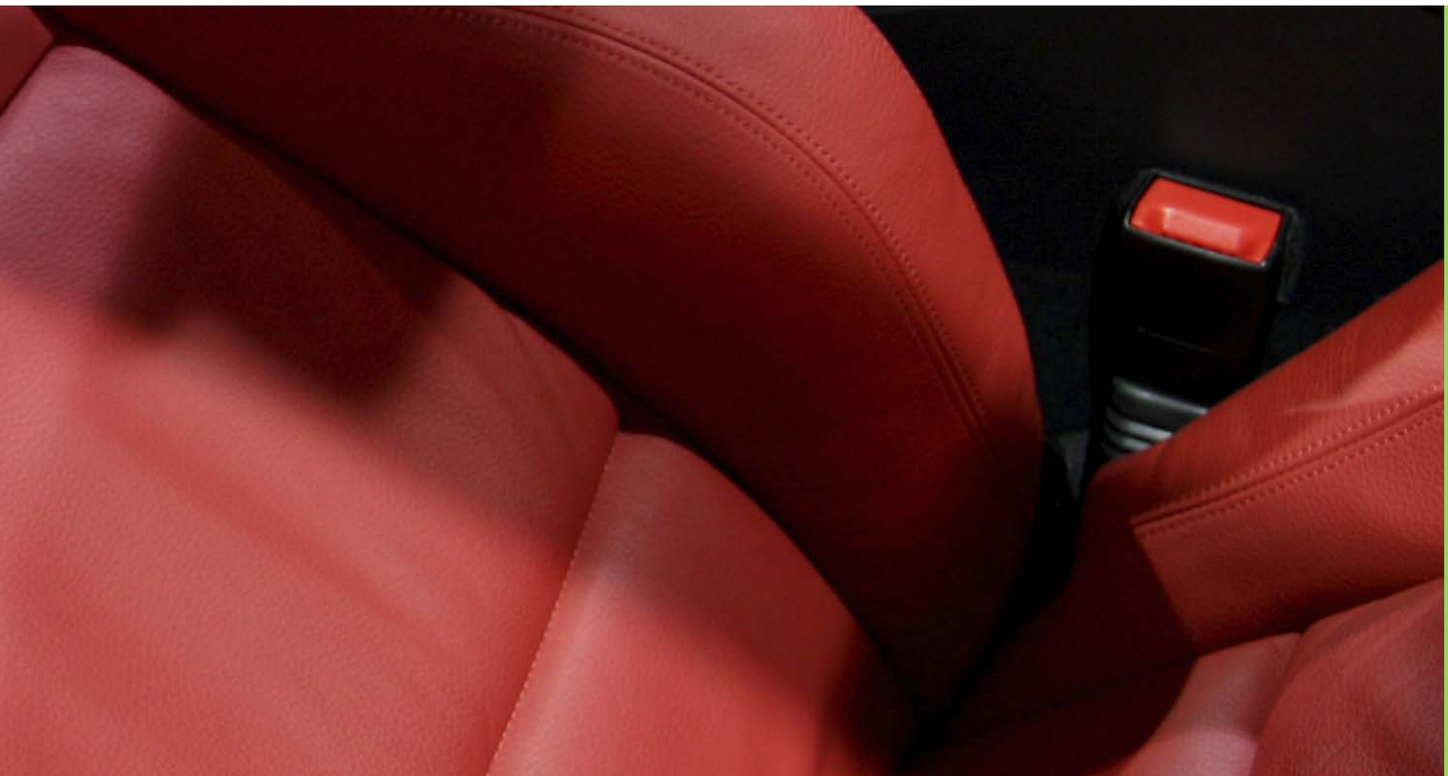


Automotive interiors and furniture utilise flexible foam surfactant technology due to its wide range of density, cushioning ability and versatility of use.

SURFACTANTS

Flexible Moulded

	Stabilising Efficiency (Low, Medium, High)	Improved Surface Appearance	Low Emissions	TDI Cold Cure	TDI/MDI Cold Cure	MDI Cold Cure	TDI Hot Cure
Dabco DC2585	L	•	•		•		
Dabco DC3043	M	•		•	•	•	
Dabco DC5164	H			•			
Dabco DC5950	M						•
Dabco DC5900	H						•
Dabco DC6070	H			•	•		
Dabco SI1103	L		•			•	



Air Products offers a range of additive solutions for Flexible Slabstock.

CATALYSTS

Flexible Slabstock

	Conventional Ether, High Resilience & Visco-Elastic						Polyester Foams				
	Blow	Balanced	Gel	Non Fugitive	Hardness Improvement	Visco-Elastic	Blow	Balanced	Gel	Low Odour	Non Fugitive
Dabco 2039									•	•	
Dabco 33LV			•								
Dabco B-16			•						•		
Dabco BDMA									•		
Dabco BL-11	•										
Dabco BL-13	•										
Dabco BLV		•									
Dabco NE300	•			•		•	•				•
Dabco NE650		•		•		•		•			
Dabco NE1082			•	•		•			•		•
Dabco T-9			•								
Dabco T900			•								
Polycat 77		•									

SURFACTANTS

Flexible Slabstock

	Wide Processing	Efficiency	CO_2 / CH_2CL_2 Blown Foams	Suitable for FR Foams	Low Emissions	General Purpose	General Purpose	General Purpose	Low Emissions
	Conventional Ether					HR	Visco Elastic TDI	Visco Elastic MDI	Polyester	
Dabco DC198		H	●		●		●	●		
Dabco DC5160		M			●					
Dabco DC5188		H			●					
Dabco DC5526		M							●	
Dabco DC5900	++	M	●		●					
Dabco DC5901	++	M	●		●					
Dabco DC5906	+	L-M	●		●					
Dabco DC5950	+++	M-H	●	●	●		●			
Dabco DC5986	++	M	●							
Dabco DC5987	+	M-H	●	●	●					
Dabco DCI990		M							●	●
Dabco SI2301	+++	M-H			●	●		●		
Dabco SI2302	+++	M-H			●	●		●		

+ = Good ++ = Very Good +++ = Excellent - = Poor -- = Very Poor

Technology

We pride ourselves on truly understanding customer needs and developing products that suit. In an ever changing environment, Air Products is committed to producing new additives that improve productivity, performance and impact on the environment.

Our products are backed by a global network of support services:

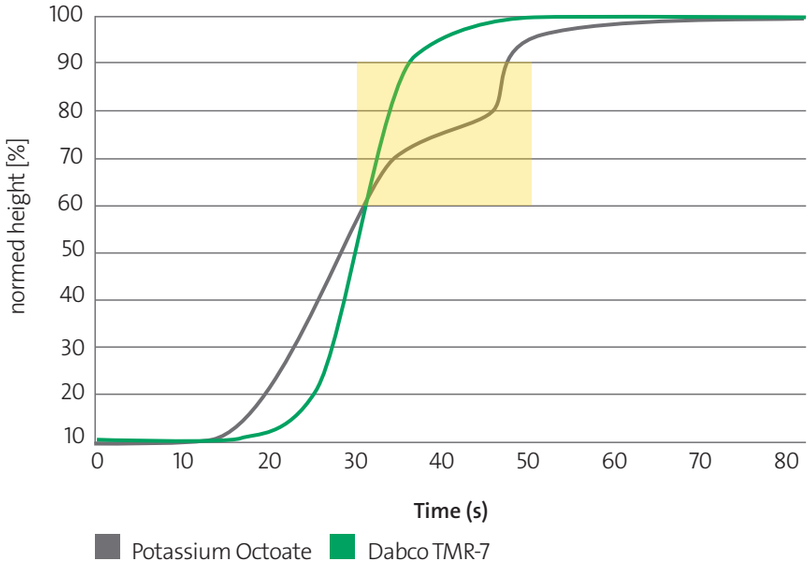
- Local sales & technical service personnel, with in-depth industry knowledge and apprecation of your needs.
- Worldwide manufacturing and warehousing capabilities.

Dabco TMR-7

Dabco TMR-7 is an amine-based trimerisation catalyst designed specifically for the production of PIR foam. The product, along with other members of the Dabco TMR catalyst family, provides formulators with the necessary tool for tailoring isocyanurate foam reactivity to meet processing needs.

- Smooth rise profile
- Improved edge cure
- Facilities density reduction
- No odour
- Permits higher indexes

By utilising Dabco TMR-7 in place of a conventional trimerisation catalyst, you can eliminate the 'kick', which often causes processing challenges.



Dabco SI3203

Dabco SI3203 silicone surfactant is designed for use in both rigid PUR and PIR foams. Dabco SI3203 provides for very efficient emulsification, nucleation and stabilisation, resulting in fine, uniform foams with excellent insulation properties.

- Produces very fine, uniform cells resulting in excellent λ-values
- Excellent foam flow properties and excellent density distribution
- Non hydrolysable structure for excellent premix stability; good compatibility with rigid foam polyol pre-blends
- Low viscosity and low freezing point allowing for easy handling and accurate pumping

Amine Catalysts

	Typical Physical Properties				
	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g
Dabco 25-S	> 108	110	1.02	Soluble	934
Dabco 33-LV	> 110	125	1.03	Soluble	560
Dabco 1027	95	75	1.10	Soluble	1,195
Dabco 1028	104	125	1.03	Soluble	900
Dabco 1029	> 105	60	1.09	Soluble	1,170
Dabco 2039	95	18	1.01	Soluble	415
Dabco 2040	107	8	1.05	Soluble	543
Dabco 8154	110	160	1.04	Soluble	548
Dabco B-16	39.5	9	0.80	P. Soluble	N/A
Dabco BDMA	54	90	0.91	P. Soluble	N/A
Dabco BL-11	71	4	0.90	Soluble	251
Dabco BL-13	91	41	0.98	Soluble	251
Dabco BL-17	65	61	1.04	Soluble	476
Dabco BL-19	66	3	0.85	Soluble	N/A
Dabco BLV	78	40	1.00	Soluble	260
Dabco Crystal	62	N/A	1.14	P. Soluble	N/A
Dabco DC-1®	63	400	1.19	Insoluble	689
Dabco DC-2®	66.5	391	1.25	Soluble	603
Dabco EG	>100	60	1.09	Soluble	1,207
Dabco KTM60	112	217	1.16	Soluble	1,456
Dabco XD-102	99	96	1.02	Soluble	869
Dabco XD103	>110	200	1.01	Soluble	1,003
Polycat 5	72	3	0.85	Soluble	N/A
Polycat 8	43	2	0.87	Insoluble	N/A
Polycat 9	102	6	0.87	Soluble	N/A
Polycat 12	101	10	0.89	Insoluble	N/A
Polycat 36	94	17	0.90	Soluble	N/A
Polycat 58	43	3	0.88	Soluble	1,033
Polycat 77	92	3	0.85	Soluble	N/A
Polycat DBU	>96	14	1.04	Soluble	N/A
Polycat SA-5	50	60	1.05	Soluble	119
Polycat SA-8	119	9,500	1.18	Soluble	258

Product Description
Strong urethane reaction (gelation) catalyst; 25% triethylenediamine (TEDA) and 75% 1,4 butanediol.
Strong urethane reaction catalyst for multi-purpose use; 33% triethylene diamine and 67% dipropylene glycol liquid.
Non-acid-blocked, controlled-activity catalyst for MEG extended polyester and polyether systems. Exhibits delayed cream with good back-end cure/rapid demould. Increases processing flexibility.
Non-acid-blocked, controlled-activity catalyst for 1,4-butanediol extended polyester and polyether systems. Exhibits delayed cream with good back-end cure/rapid demould. Increases processing flexibility.
Delayed-action tertiary amine catalyst diluted in ethylene glycol, for use in polyester-based shoe sole applications. It extends cream time and provides improved flowability, whilst maintaining fast demoulding.
Promotes the urethane (polyol-isocyanate) reaction. It is a low odour alternative to morpholine based amines in flexible polyester slabstock applications and used in all or high water rigid foam applications to reduce friability/improve adhesion to various substrates.
Low odour amine catalyst used to enhance cure and adhesion to substrate in a variety of flexible and rigid polyurethane foams.
Delayed action gelation catalyst; Dabco Crystal-based. Less corrosive than other delayed-action catalysts.
Polyester flexible slabstock co-catalyst with Dabco NCM for die-cut ability. Improves surface cure in flexible moulded, integral skin, rigid and spray foams.
Benzyldimethylamine is used to promote the urethane reaction and is commonly used in high water rigid applications. For lower odour and enhanced adhesion promotion, try Dabco 2039 or Dabco 2040 catalysts.
Strong urea reaction catalyst; 70% bis (2-Dimethylaminoethyl) ether diluted with 30% dipropylene glycol.
Strong urea reaction (blowing) catalyst. Diluted version of Dabco BL-11.
Delayed-action urea reaction catalyst; acid-blocked Dabco BL-11 catalyst.
Strong urea reaction catalyst; 100% bis (2-dimethylamino ethyl) ether.
Performance optimised, balanced catalyst; Dabco 33-LV: Dabco BL-11 (3/1); for continuous flexible slabstock foams.
Strong urethane reaction catalyst for multi-purpose use; high-purity triethylenediamine (TEDA).
Delayed action tertiary amine that promotes the urethane (polyol-isocyanate) reaction in a variety of flexible moulded polyurethane foams.Dabco DC5-LE catalyst can be used in applications requiring lower or no emissions from amines.
Delayed action tertiary amine that strongly promotes the urethane (polyol-isocyanate) reaction in a variety of flexible moulded polyurethane foams. Dabco DC-2 catalyst has higher catalytic activity versus Dabco DC1 catalyst.
Strong urethane reaction catalyst; 33% triethylenediamine (TEDA) and 67% ethylene glycol. Widely used in MEG extended microcellular applications.
Non-acid blocked, controlled-activity, balanced amine catalyst that provides extended cream time or rapid demould.
Tertiary amine catalyst diluted in mono-ethylene glycol. Developed specifically for use in low density microcellular polyurethane foams to improve the foam flowability.
Tertiary amine catalyst developed to enable the production of high quality low density shoe soles that can be used in both polyester and polyether microcellular systems. It provides the ability to improve surface and cell structure.
Strong urea reaction catalyst; pentamethyldiethylenetriamine.
Widely applicable urethane reaction catalyst; dimethylcyclohexylamine.
Low odour, balanced catalyst for rigid and flexible moulded foam applications. Can be used as a co-catalyst with strong blow and gel amine catalyststo balance the reaction and provide a smooth rise profile.
Process aid/improved-cure co-catalyst for pour-in-place rigid and flexible foam applications.
Highly active, liquid tertiary amine that promotes a balanced urethane/urea reaction in low water blown rigid polyisocyanurate foams.
Low odour, surface cure catalyst for flexible moulded foam applications.
Balanced gelation and blowing catalyst; pentamethyldipropylenetriamine. Promotes open cells.
DiazoBicycloUndecene, a tertiary amine that strongly promotes the urethane (polyol-isocyanate) reaction in semi-flexible, microcellular foam, coating, adhesive, sealant and elastomer applications.
Strongly promotes the urethane reaction, providing very fast cure speeds. Can be used neat or as a co-catalyst. Pot life can be extended by using in conjunction with Polycat SA-8.
Promotes the urethane reaction under heat activation. Provides for a very long pot life, similar to that typically achieved with mercury catalysts. If required, Polycat SA-8 can be accelerated with Polycat SA-5.

Reduced-Emission Amine Catalysts

	Typical Physical Properties					
	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g	
Dabco DC5-LE	178	4,300	1.08	Insoluble	138	
Polycat SA2LE	94	2,600	1.03	Soluble	168	
Polycat 30	73	4	0.80	Soluble	N/A	
Polycat 34	120	6	0.64	Soluble	27	

Product Description

Low emission, delayed action co-catalyst that stongly promotes the urethane reaction while maintaining cream time. By not contributing to amine emissions, it is used to meet automotive OEM emission specifications such as VDA 278. Can be used as a co-catalyst in flexible, rigid and CASE applications.
Delayed action tertiary amine based on Dabco DBU. It strongly promotes the urethane reaction under heat activation in microcellular, integral skin and CASE applications. It is particulaly recommended for use with low activity aliphatic isocyanates.
Low odour, balanced amine catalyst developed for use in rigid closed cell spray polyurethane foam. It may also increase system shelf life compared to systems containing other amine catalysts like Dabco DMEA (dimethylethanolamine).
Low odour tertiary amine that primarily promotes the urethane reaction (polyol-isocyanate) in rigid foam formulations. It can replace Polycat 8 catalyst when low odour is needed.

Polycat SA-5 / Polycat SA-8

Polycat SA-5 and Polycat SA-8 are heat-activated amine based catalysts for CASE applications; Polycat SA-8 is designed to provide for a long pot life, whilst Polycat SA-5 offers fast cure speeds. By using the catalysts in combination with one another, formulators can tailor systems to cover a wide range of cure requirements and replace heavy metal based catalysts.

- Polycat SA-8: Very long pot life
- Polycat SA-5: Fast cure speed
- Facilitates a wide range of cure requirements
- Heavy metal free

Dabco NE1091 / Dabco BA305

Utilising Dabco NE1091 catalyst in combination with Dabco BA305 additive provides for a unique non-emissive catalyst package for TDI and MDI moulded foams

- Excellent physical properties after Humid Ageing
- Meets VDA 278 specification
- Tool for lightweight seating systems

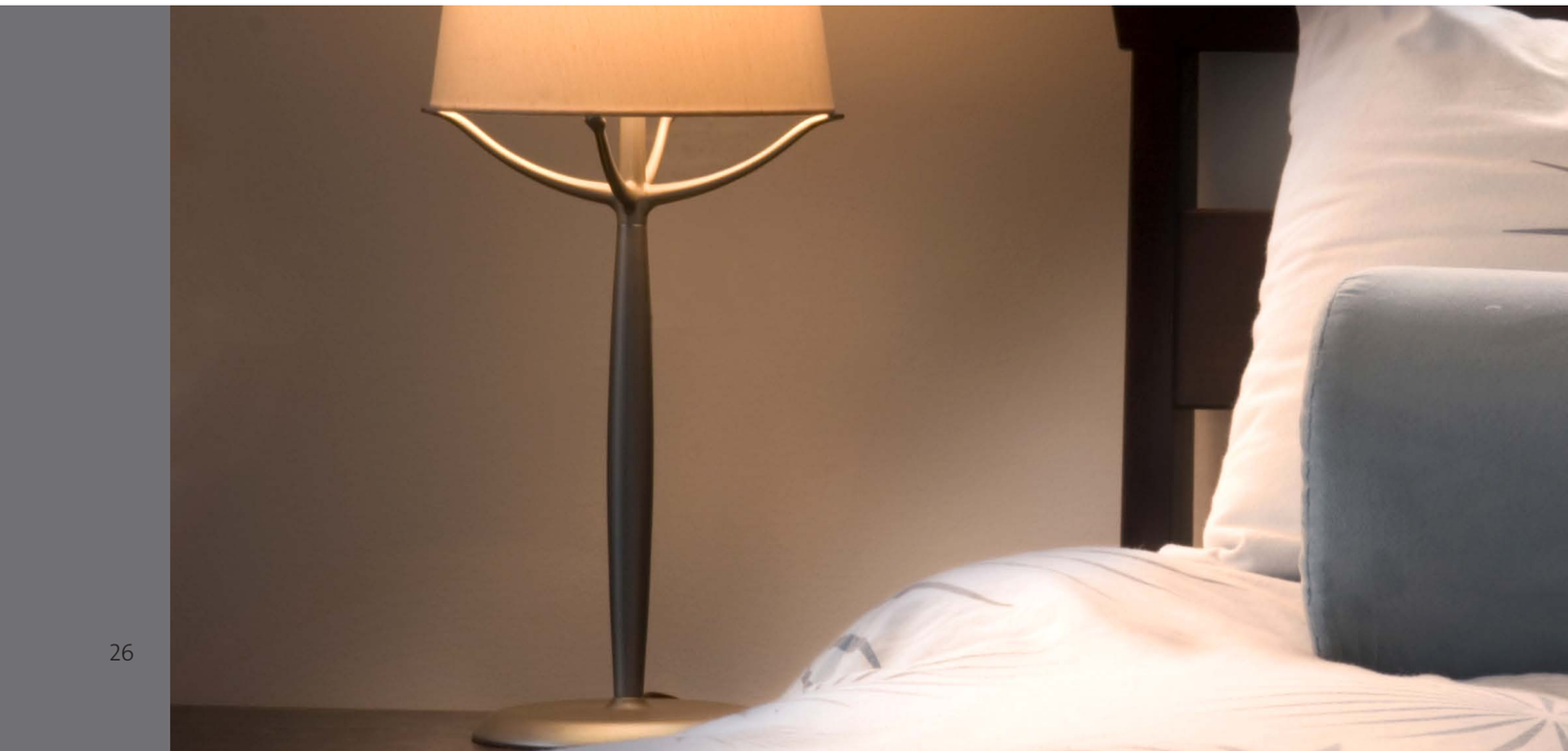
Dabco SI2302

Dabco SI2302 is a silicone surfactant designed for High Resilience flexible slabstock foam. It enables formulators to meet Certipur®, OEKO-TEX® or LGA-tested for contaminants emission requirements.

- Very low contribution to foam VOC emissions
- High efficiency
- Provides for open celled foam
- Suitable for TDI / MDI HR slabstock foam and MDI viscoelastic foam

Non-Emissive Amine Catalysts

	Typical Physical Properties				
	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g
Dabco BA305	>95	68	1.22	Soluble	164
Dabco NE300	124	9.2	0.91	Soluble	276
Dabco NE650	>100	60	0.94	Soluble	430
Dabco NE1070	168	1,200	1.06	Soluble	730
Dabco NE1082	105	280	0.95	Soluble	495
Dabco NE1091	>93	425	0.99	InSoluble	131
Dabco NE1095	>110	44	0.88	Soluble	381
Dabco T	89	7	0.91	Soluble	387
Polycat 15	88	5	0.86	Soluble	282
Polycat 17	95	12	0.92	Soluble	353
Polycat 31	88	4	0.84	Soluble	298
Polycat 140	89	7	0.94	Soluble	413
Polycat 142	65	4	0.94	Soluble	435



Product Description
Non-emissive additive to be used in combination with Dabco NE1090 gel catalyst to help maintain physical properties of TDI moulded foam after humid aging.
Non-emissive urea reaction catalyst for MDI and TDI flexible moulded, semi-flexible and slabstock foams. Meets Thermodesorption Method VDA 278 for VOC and FOG.
Non-emissive balanced urethane/urea reaction catalyst for all types of flexible slabstock foam.
Non-emissive, urethane reaction catalyst for MDI and TDI flexible moulded foam. Meets Thermodesorption Method VDA 278 for VOC and FOG.
High activity non-emissive gelling catalyst for slabstock and flexible moulded foams. Meets Certipur and LGA requirements.
Non-emissive urethane reaction (gelation) catalyst for flexible moulded foam that helps improve physical properties of the foam after humid aging in both TDI & MDI formulations.
Non-emissive urethane reaction (gelation) catalyst for MDI and TDI flexible moulded foam. Does not corrode polycarbonate.
Non-emissive amine which is more selective to the water-isocyanate blowing reaction. Due to its reactive hydroxyl group it readily reacts into the polymer matrix. It can be used in flexible and rigid polyurethane systems where a smooth blowing profile is required.
Isocyanate-reactive, balanced urethane/urea reaction catalyst. Promotes surface cure.
Isocyanate-reactive, low odour, balanced urethane/urea reaction catalyst.
Non-emissive amine designed for low-density, water-blown, open-cell spray polyurethane foam.
Non-emissive amine designed for low-density, water-blown, open-cell spray foam.
High-efficiency, non-emissive, urea reaction (blowing) catalyst for open cell spray foam.

Trimerisation Catalysts

Metal Catalysts

	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g
	Typical Physical Properties				
Dabco TMR	121	470	1.05	Soluble	463
Dabco TMR-2	121	190	1.07	Soluble	463
Dabco TMR-3	> 110	50	1.07	Soluble	639
Dabco TMR-7	138	200	1.03	Soluble	900
Dabco TMR-13	120	1,300	1.00	P. Soluble	290
Dabco TMR-25	111	20	1.25	Soluble	1,834
Dabco TMR-30	150	201	0.97	P. Soluble	213
Dabco TMR-31	124	13,500	1.14	P. Soluble	501
Polycat 41	104	33	0.95	Soluble	N/A
Dabco K-15	138	5,400	0.13	Soluble	271
Dabco K-17	111	220	1.28	Soluble	1,066
Dabco K-2075	> 100	1,200	1.20	Soluble	323
Dabco K2097	124	550	1.23	Soluble	740
Dabco MB20	158	~5,000	1.22	Insoluble	177
Dabco T-9	138	250	1.29	Insoluble	N/A
Dabco T-12	> 204	125	1.03	Insoluble	N/A
Dabco T-120	121	20	1.02	Insoluble	N/A
Dabco T900	> 119	1,500	1.15	Insoluble	209

Product Description
Amine-based trimerisation catalyst.
Amine-based, delayed action trimerisation catalyst.
Amine-based, delayed action trimerisation catalyst. Provides more delay than Dabco TMR-2 catalyst.
Low-odour, amine-based trimerisation catalyst. Compared to conventional octoate catalysts, it facilitates a uniform and controlled rise profile.
Trimerisation catalyst for use in PIR or PUR formulations, providing excellent isocyanurate conversion and improved flowability.
Dabco TMR-25 is a trimerisation catalyst, commonly used to produce PIR foam in the presence of formic acid.
Amine based, delayed-action urethane reaction catalyst. Weak trimerisation catalyst.
Co-catalyst that promotes strong back-end cure and improves dimensional stability in rigid forms. Moderate trimerisation catalyst.
Moderately active trimerisation catalyst with excellent blowing capability. Recommended for use as a co-catalyst with other polyurethane and polyisocyanurate catalysts. It binds chemically into the polyurethane foam matrix while maintaining or improving foam properties in flexible slabstock systems.
Cost-effective catalyst for PIR rigid foam applications; potassium octoate in diethylene glycol.
Cost-effective catalyst for PIR rigid foam applications; potassium octoate in diethylene glycol.
Dabco K-2075 is a blend of potassium octoate in diethylene glycol, which due its low viscosity is easy to dose using standard pumps.
Solution of potassium-acetate in diethylene glycol used for promoting the isocyanurate reaction; can be used in a wide range of rigid foam applications.For better surface curing, improved adhesion and better flow alternatives, refer to Dabco TMR or Dabco TMR-2 catalysts.
Bismuth-based urethane reaction catalyst developed for use in a wide range of urethane foam formulations requiring high catalytic activity.
Stannous octoate; standard tin catalyst for continuous flexible slabstock applications.
Strong urethane reaction catalyst; dibutyltindilaurate.
Strong urethane reaction (gelation) catalyst with good masterbatch hydrolytic stability.
2-ethyl hexanoic acid emission-free gel catalyst for use in all types of flexible slabstock foams. Similar use level to that of Dabco T-9. Can be used with non-fugitive amine catalysts as well as traditional tertiary amines.

Silicone Surfactants

	Typical Physical Properties				
	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g
Dabco DC193	113	220	1.07	Soluble	75
Dabco DC198	71	2,100	1.04	Soluble	N/A
Dabco DC2584	>100	70	0.98	Insoluble	60
Dabco DC2585	159	75	0.98	Insoluble	60
Dabco DC3043	>120	150	0.98	Insoluble	14
Dabco DC5000	>101	170	0.98	Insoluble	27
Dabco DC5043	82	300	1.01	Insoluble	24
Dabco DC5160	115	1,150	1.04	Soluble	N/A
Dabco DC5164	88	370	1.04	Insoluble	24
Dabco DC5179	115	14	0.94	Insoluble	252
Dabco DC5188	108	600	1.04	Soluble	418
Dabco DC5350	>97	1,340	1.03	P. Soluble	N/A
Dabco DC5357	103	450	1.04	Insoluble	54
Dabco DC5526	110	120	1.01	Insoluble	131
Dabco DC5598	99	525	1.05	Insoluble	48
Dabco DC5604	108	280	1.05	Soluble	65
Dabco DC5900	120	2,000	1.04	Soluble	N/A
Dabco DC5901	>105	1,200	1.03	Soluble	167
Dabco DC5906	98	700	1.02	Insoluble	335
Dabco DC5933	108	205	1.04	Soluble	535
Dabco DC5950	97	1,600	1.00	Soluble	N/A
Dabco DC5986	115	530	1.02	Soluble	418
Dabco DC5987	101	795	1.03	Soluble	335
Dabco DC6070	111	66	0.98	Insoluble	53
Dabco DCI990	126	600	1.05	Insoluble	N/A

Product Description
Industry standard rigid foam and shoe sole surfactant. Provides excellent flammability performance in rigid foams.
High-efficiency surfactant for polyether slabstock applications. Good stability in both water and amine premixes.
High efficiency silicone stabiliser for flexible moulded cold cure T/M systems; designed for low emission/low fogging polyurethane foam.
Provides excellent performance in a variety of cold-cure MDI flexible systems and energy-absorbing rigid systems.
Designed to improve bulk and dimensional stability in polyester and polyether microcellular applications.
Silicone glycol copolymer designed for use in producing open cell rigid and semi-rigid polyurethane foam or as an internal mould release in flexible moulded foams.
Medium efficiency, standard surfactant for TDI HR flexible moulded and HR flexible slabstock applications. Broad processing latitude.
Medium efficiency silicone surfactant that can be used for the formulation of low-to-medium density polyether flexible slabstock foams.
High efficiency surfactant for TDI HR flexible moulded applications. Excellent bulk and vent stability.
For use in HR flexible foams, functioning primarily as a cell regulator and surface stabilising agent.
High efficiency silicone stabiliser for use in producing all densities of continuous and discontinuous (box foam) polyether flexible slabstock formulations.
Silicone surfactant for improved flame resistance in low-density, water-blown, open-cell spray foam.
High performance surfactant for rigid appliance and pour-in-place applications. Excellent flow and and energy performance. Improves surface quality in rigid moulded foam.
Silicone surfactant used in polyester flexible slabstock foam applications. It is recommended to add Dabco DC5526 surfactant as a separate stream to the mixing head.
General purpose surfactant for rigid boardstock and pour-in-place applications. Fine cell structure, good flow and energy performance.
General purpose rigid surfactant. Excellent system compatibility, stability, and foam physical properties.
General purpose silicone surfactant for polyether flexible slabstock applications providing a wide processing latitude.
General purpose silicone surfactant for polyether flexible slabstock applications providing a wide processing latitude. Lower viscosity than Dabco DC5900 for easier pumping.
Medium-efficiency surfactant for all conventional polyether flexible slabstock foam.
Silicone surfactant designed for use in box and continuous formulations for the production of flexible slabstock foam.
Broad latitude, medium efficiency surfactant that exhibits enhanced flame retardant properties in flexible slab applications including viscoelastic and melamine filled foams. Crib 5 rating can be achieved when using Dabco DC5950 surfactant.
High efficiency surfactant for use in polyether slabstock foam utilising carbon dioxide and acetone blown technologies. Aids in efficient use of flame retardant
High efficiency surfactant for use in polyether slabstock foam utilising carbon dioxide and acetone blown technologies. Provides finer cell structure and an efficient use of flame retardant (FR) additives.
Low emission silicone sufactant for TDI cold cure moulded or HR slabstock foam systems.
Silicone surfactant used for various polyester flexible slabstock foam applications where low VOC/low fogging values are required. Can also be used in flexible moulded and rigid foam applications for cell opening.

Silicone Surfactants

	Typical Physical Properties					
	Flash Point, °C (PMCC)	Viscosity at 25 °C cPs	Specific Gravity @ 21 °C (g/cm³)	Water Solubility	Calculated OH Number, mgKOH/g	
Dabco SI1103	180	84	0.98	Insoluble	60	
Dabco SI2301	>100	25	0.83	Insoluble	320	
Dabco SI2302	>90	50	0.96	Insoluble	45	
Dabco SI3101	>65	1,250	1.05	Soluble	78	
Dabco SI3102	65	1,100	1.05	Soluble	81	
Dabco SI3201	>65	750	1.04	Emulsion	73	
Dabco SI3202	>65	110	1.00	Emulsion	129	
Dabco SI3203	>65	230	0.99	Insoluble	100	
Dabco SI3205	>65	845	1.09	Soluble	87	
Dabco SI3501	>65	400	1.04	Insoluble	N/A	
Dabco SI3503	>65	350	1.07	Soluble	98	
Dabco SI4202	85	280	1.05	Soluble	104	

Non-Silicone Surfactants

LK-221E	> 101	2,800	1.01	Insoluble	42	
LK-443E	115	2,600	1.01	Insoluble	36	

Processing Aids

Dabco BA100	>200	~2,300	1.10	P. Soluble	214	
Dabco BA201	>101	350	1.28	Soluble	1,807	
Dabco 2035	>100	650	1.10	Soluble	620	
Dabco Kitane 20AS	>100	1,100	0.98	Soluble	420	
Dabco Scoba AS45	>100	50	0.97	Insoluble	N/A	
Dabco EM400	159	15	0.98	P. Soluble	122	
Dabco PE40	>100	1,000	1.10	Soluble	1,892	

Product Description
Low emission, low-efficiency/wide-latitude surfactant for MDI flexible moulded applications; excellent vent stability and foam surface appearance.
Silicone stabiliser/Cell Regulator, designed for low-emission, high-resilient (HR) TDI and MDI flexible slabstock based formulations.
Silicone stabiliser/Cell Regulator, designed for low-emission, high-resilient (HR) TDI and MDI flexible slabstock based formulations.
Designed for use in PUR appliance systems, Dabco SI3101 provides for very efficient emulsification, nucleation and stabilisation.
Designed for use in PUR appliance systems, Dabco SI3102 provides for very efficient emulsification, nucleation and stabilisation.
Designed for use in rigid PUR and PIR foams, Dabco SI3201 provides very efficient stabilisation, resulting in fine foams with excellent insulation properties.
Dabco SI3202 provides for very efficient emulsification in rigid PUR and PIR foams.
Silicone surfactant that can be used as a stand alone solution in flexible faced lamination applications, facilitating very efficient emulsification, nucleation and stabilisation, resulting in fine, uniform foams with excellent insulation properties.
General purpose silicone surfactant, designed for use in rigid polyurethane (PUR) and polyisocyanurate (PIR) foams.
Surfactant for use in One Component Foam (OCF), polyurethane (PUR) and polyisocyanurate (PIR) lamination systems. In OCF applications Dabco SI3501 will stabilise the foam structure and assist greatly in prepolymer compatibility. In rigid lamination systems, it has shown to improve lambda values compared to conventional surfactants.
Silicone surfactant suitable for use as stabiliser for most conventional polyurethane systems. It has a non-hydrolysable chemical structure which allows for premix stability.
Dabco SI4202 is a high performance surfactant which can be used in most conventional rigid polyurethane foam and shoe sole systems.

Promotes excellent emulsification and degassing in a variety of foam applications. Improves butanediol emulsification and developed to promote adhesion in dual-density shoe sole applications. Can be used as co-surfactant with Dabco DC193.
Widely applicable in rigid and flexible systems; developed to promote excellent surface quality. Excellent hydrolytic stability and cell stabilisation. In rigid moulded applications, used as a co-surfactant with Dabco DC193.

Low-corrosive, reactive blocking agent for flexible moulded and slabstock foam applications. Product forms an “in-situ” non-emissive blocking agent when added to the foaming reaction.
DABCO BA201 is a processing additive for use in PIR lamination systems, that provides for front-end delay whilst increasing back-end cure.
Hardening additive developed for use in flexible polyether slabstock foams to increase foam hardness by up to 30 % while using conventional polyol.
Compatibiliser that provides improved hydrocarbon solubility in polyol blends.
Antioxidant that prevents scorching of the foam caused by the exothermic reaction during the manufacturing process. It can be used for polyether and polyester flexible slabstock formulations to reduce discoloration or deterioration of physical properties.
Emulsifier designed for low-density, water-blown, open cell spray foam.
Solid powder (e.g., melamine) stabiliser. Improves powder dispersion in polyols, enabling more uniform FR properties within the foam.

Product Index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