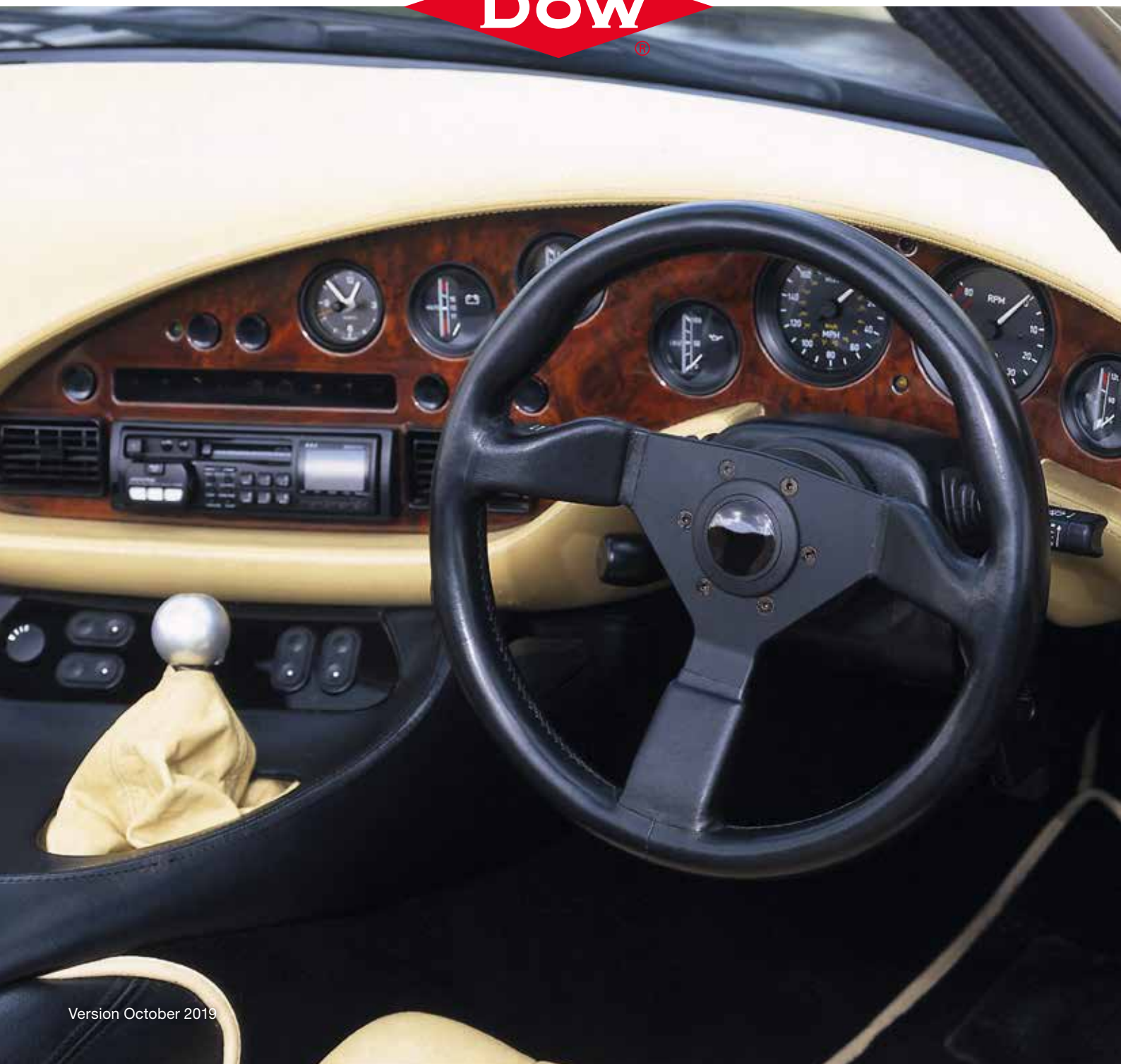
Additives for Engineering Resins



Version October 2019

Providing Excellent Solutions in Engineering Resins

Gaining an edge over competitors is becoming increasingly difficult in today's challenging environment. Dow understands that the ability to respond to changing market needs and to deliver products and services that meet or exceed those needs, is essential for long-term success. To help you stay ahead in the race for high performance products, Dow can provide an excellent solution for your engineering resins.
Today, Dow offers the following line of additives to improve the performance and processing of a variety of engineering resin systems including Polycarbonate, PBT, Nylon, POM, Styrenics and Polycarbonate blends:

- PARALOID™ EXL MBS Impact Modifiers
- PARALOID™ EXL Acrylic Impact Modifiers
- PARALOID™ EXL Specialty Modifiers

PARALOID™ EXL Impact Modifiers

PARALOID™ EXL Impact Modifiers are used successfully in the impact modification of Polycarbonates, PBT, Polyamides and a variety of other polymers, as well as blends and glass-reinforced systems.

PARALOID™ EXL-26XX/36XX Additives are methyl methacrylate-butadiene-styrene (MBS) core-shell impact modifiers. Their structure and composition provide high impact efficiency at low temperature, good retention of part rigidity, excellent flow properties, part surface finish and colourability.

The PARALOID™ EXL-23XX/33XX Series are all acrylic coreshell weatherable impact modifiers. In addition to their high heat stability and weatherability, they provide excellent part surface finish, processability and good retention of part rigidity.

PARALOID™ TMS-2670J Modifier and EXL-2300 G are core shell modifiers designed for impact modification of thermoset resins. They provide excellent impact efficiency, high adhesion performance and easy processing. Depending on the grade and application design low temperature impact or weatherability can be provided.

MBS and acrylic core-shell impact modifiers have pre-defined morphology and particle size which are not influenced by compounding conditions. Customers can use a wide processing window with optimized dispersion and blend Microstructure.

PARALOID™ EXL-5136 Optical Properties Modifier

PARALOID™ EXL- 5136 Modifier is a high efficiency light diffuser for clear resins. Its structure provides homogeneous light diffusion, whilst retaining a high level of light transmission. Consequently, PARALOID™ EXL-5136 Modifier enables remarkable translucent product designs rich in colours without affecting the mechanical properties of the resin.

When PARALOID™ EXL-5136 Modifier is used in non-clear resins, it provides gloss reduction without affecting other polymer properties. The level of gloss reduction can be adjusted simply by changing the modifier addition level. It can reduce the total cost by eliminating the need for textured tools or matt coatings when a matt surface is required.
PARALOID™ EXL-5136 Modifier is also available in a dust-free pelletized form sold as PARALOID™ EXL-5137.

Recomended grades

Matrix	PARALOID™ MBS Impact Modifiers						PARALOID™ Acrylic Impact Modifiers				PARALOID™ Specialty Modifier
	EXL-2690	EXL-2650J	EXL-2691J/ 3691J	EXL-2600JE/ 3600JE	EXL-2668	TMS-2670J	EXL-2300/ 3300	EXL-2314	EL-3361	EXL-2300G	EXL-5136/ 5137
PC	●	●	●	○			●		●		●
GF-PC	●	●	●	○			●				
PC/ABS	●	●	●	○			●		●		○
PC/PBT	●	●	●	○			●	●	●		○
PC/PET	●	●	●	○			●	●	●		○
PBT		●	○	○			●	●			
GF-PBT		●	○	○			●	●			
PA6								○			
GF-PA6							○	○			
PA6/ABS								●			
ABS											○
Clear ABS					●						○
SAN											○
POM				●							○
Thermoset						●				●	
	Properties										
Room Temperature Impact	+++	+++	+++	+++	+++	+++	+++	+++	+++	+++	
Low Temperature Impact	+++	+++	+++	+++	+	+++	–	–	–	+	
Weatherability	–	–	–	–	–	–	+++	+++	+++	+++	+++
Thermal Stability	+	++	++	++	+	++	++	+++	++	++	
Hydrolytic Stability	+	+	+++	++							
Modulus Retention	++	++	++	++	++	++	+++	+++	+++	++	
Melt Flow Retention	++	++	++	++	++	+	++	+	++	++	
Colorability	++	++	+++	++		++	+	+	++	++	++
Transparency	No	No	No	No	Yes	No	No	No	No	No	
Processability	+++	+++	+++	+++	+++	++	+++	+++	+++	++	+++
Dispersion	+++	+++	+++	+++	+++	++	+++	+++	+++	++	+++
Formaldehyde Emissions in POM				+++							

● Primary Application ○ Secondary Application

+++ Excellent ++ Very Good + Good – Fair

Product denomination starts with a “2” for the powder form and “3” for the corresponding pellet form, and with a “5” for optical properties

Note: except otherwise expressly specified, the graph and tables presented in this document originate from internal studies conducted by Dow in 2018.

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EUR 874-02415-1019-EN