

THE APPLICATION OF MINERAL SCIENCE

Adhesives and Sealants

Product overview

IMERYS KAOLIN's range of products for the Adhesives and Sealants industry are processed and refined to complement our customer's production processes, improving the quality and raising the performance of customer products.

IMERYS KAOLIN offers tailor-made solutions based on an in-depth understanding of the manufacturing process, production and business needs of the Adhesives and Sealants industry.

ADHESIVES AND SEALANTS PRODUCT OVERVIEW

VISCOSITY MODIFICATION

An important property in sealants and adhesives is the rheology of the formulation, both in the mixing by the producer and in application by the end user. The requirements may be different, for example, the producer may want low viscosity at high shear rates, to make mixing and dispersion faster and more efficient. In contrast, the end user may need a high viscosity at low shear rates to prevent slumping or spreading of the adhesive where it is not required.

Paper Laminating – In applications such as high speed paper lamination and tube-winding, the end user will want medium-high viscosity at high shear rates, which prevents splashing that would occur if the formulation had low viscosity at high shear rates.

By carefully selecting an IMERYS KAOLIN grade with suitable mineralogy, particle size and size distribution, it is possible to achieve control of both low and high shear viscosities during production, application and post application. The choice of kaolin will be very dependent on the customers formulation and application requirements, and our technical experts remain available to support this decision making process.

BARRIER PERFORMANCE

Kaolin is a naturally platy mineral and after enhancement through further engineering during the manufacturing process, this platy structure can give excellent barrier properties in sealants and adhesives by creating a tortuous path to protect the material that has been sealed.

EXTENDED TACK

The engineered platy structure of IMERYS KAOLINS' hydrous kaolin products can also beneficially extend the tack of an adhesive by delaying absorption of the adhesive into the substrate.

OPACITY AND PIGMENT EXTENSION

IMERYS KAOLIN extensive range for Adhesives and Sealants includes grades which are also highly effective extenders of titanium dioxide and other pigments and can be used to increase opacity or reduce costs through reducing pigment concentrations.

MOISTURE SENSITIVE APPLICATIONS

The low surface hydroxyl content of IMERYS' calcined kaolin leads to a low moisture pick-up, resulting in excellent performance in moisture sensitive Modified Silicone (MS) and Polyurethane (PU) sealant applications. Specialist supply chain measures are also available for the most demanding applications.

ADHESIVES AND SEALANTS PRODUCT OVERVIEW

PRODUCT	ADHESIVES				OTHER				SEALANTS				TYPICAL PROPERTIES											
	Adhesives solvent Based	Dextrine	Starch	Polyvinyl Alcohol	Polyvinyl Acetate	Sodium Silicate	Barrier vs Grease	Pressure Sensitive Adhesives	Polyurethanes 1k	Polyurethanes 2k	Acrylates	Latex Compounds	Brightness (ISO R457)	+ 10µm (mass % max)	- 2µm (mass %)	d ₅₀ (µm)	Moisture (mass % max)	Surface Area (BET, m ² /g)	Aerated powder density (kg/m ³)	Tapped powder density (kg/m ³)	+300 mesh (mass % max)	pH	Oil absorption (g/100g)	
Hydrous Kaolin																								
Polwhite E	-	-	R	R	R	-	-	-	-	R	-	78.5	35	25	3.5	1.5	8	360	810	0.05	5	33		
Polwhite B	R	R	R	R	R	-	-	R	R	-	R	82.5	15	45	2	1.5	10	370	750	0.05	5	38		
Polwhite EB	-	-	R	R	R	-	-	-	-	R	-	76	35	25	3.5	1.5	9	450	-	3	6.5	37		
Polwhite KL	R	R	R	R	R	-	-	R	R	-	R	76	10	50	2	1.5	13	360	-	0.06	6.5	42		
Speswhite	-	R	R	R	-	R	C	-	-	-	R	85.5	0.5	79.5	0.7	1.5	14	360	620	0.02	5.5	42		
Barrisurf HX	R	R	R	R	-	-	R	R	-	-	-	-	-	-	-	-	-	-	-	Properties available on request	-	-	-	
Hydrite Flat D	-	R	R	R	-	-	-	-	-	-	-	81.5	10	40	3	1	10	580	900	0.05	4.7	36		
Calcined Kaolin																								
PoleStar 200R	-	-	-	-	-	-	-	R	C	-	-	88.5	10	44	2	0.5	8	340	600	0.05	7	50		
PoleStar 400	-	-	-	-	-	-	-	R	C	-	-	91	2	90	0.6	1	15	270	390	0.02	7	76		
Opacilite	-	-	-	-	-	R	-	R	-	-	-	87	5	56	1.6	0.5	11	260	480	0.05	5.5	74		
MetaStar 501	-	-	-	-	-	R	-	-	-	-	-	82.5	5	60	1	1	14	320	620	0.1	5.5	65		

KEY
R Recommended
C Can be used

ABOUT IMERYS

IMERYS is the world leader in mineral-based specialty solutions for industry. We transform a unique range of minerals to deliver functional specialty solutions that are essential to customers' products and manufacturing processes. With 300 scientists, eight research and technology centers, 21 market-focused regional laboratories and close-ties with renowned research institutes, we lead the way in engineering minerals for industry.

ABOUT IMERYS KAOLIN EUROPE, MIDDLE EAST AND AFRICA

IMERYS Kaolin EMEA is a division of IMERYS. With over a hundred years' experience in the minerals business, we offer customers engineered solutions derived from our portfolio of kaolin and calcined kaolins. We refine and engineer these minerals through various—often proprietary—processes that influence their concentration, size, shape, structure and surface chemistry to obtain the exact properties our customers require. Each year, we process thousands of tons of materials to the highest standards of quality, consistency and reliability.

DELIVERING THE GOODS

With production sites in the UK, France and North America we are able to provide customers with optimized logistics and costs. Our sales administrators organize the optimum transport, warehousing and product delivery form to meet our customers' specific needs.

MEETING TODAY'S NEEDS. SECURING TOMORROW'S

We believe that running a successful business and sustaining quality of life and the environment go hand in hand. From implementing behavior based safety training to rehabilitating the land, we think it's important that future generations' needs are not compromised by our actions today.

OUR FUNDAMENTAL SUSTAINABILITY PRINCIPLES ARE:

Safety - We promote the health and safety of employees, contractors, customers, neighbors and consumers through active caring.

Partnership - We seek to understand the issues that are important to our neighbors, and to make a lasting contribution to the communities in which we operate.

Environmental protection - We work to minimize our environmental footprint by using natural resources efficiently, preventing pollution, complying with applicable laws and regulations and continually improving our performance.

Accountability - We conduct business in an accountable and transparent manner, relying on external auditing and reporting to understand and reflect our stakeholders' interests.

Product stewardship - We are committed to ensuring that our products are safe for people and the environment, employing best available technology and following best-in class procedures to ensure that our standards and practices meet or exceed safety requirements everywhere we do business.

We conduct life cycle assessments (LCA) at all our operations to quantify the environmental effects associated with producing our products from the mine to factory gate, and to identify areas for improvement. Likewise, we compile life cycle inventories (LCI) of the energy consumption, materials used and emissions generated by each of our product ranges. These LCI can be made available to customers and research institutions on request.

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FOR MORE INFORMATION

t: +44 (0)1726 818000 f: +44 (0)1726 811200 adhesives.kaolin@imerys.com imerys-kaolin.com

