



PVC Additives Brochure

April 2024

37

Years of excellence in Polymers

AKRELON

INNOVATE. EXCEL. DELIVER VALUE

BY HARYANA
LEATHER CHEMICALS LTD.

an Italian joint venture with



www.akrelon.com

WHO WE ARE



Akrelon is the **PVC additives division** of HARYANA leather chemicals Ltd

Established in 1986, HARYANA is an **Indo-Italian JV** for production of specialty acrylics

Products: IM- Acrylic impact modifiers and PA-processing aids for the PVC industry

Manufacturing Facility: Jind, Haryana with annual production capacity of 4000 MT for PVC additives

R&D: State-of-the art research acrylic and polymer emulsion lab along with a fully equipped PVC application laboratory.

Corporate Office and Techno-Commercial Service: Based in Delhi NCR

Vision: Make our mark in Asia's PVC growth story with the highest quality PVC additives.

Global Presence in specialty acrylics across 20 + countries.





ALL ROADS START HERE : A HISTORY OF INNOVATION

1986: The Founding Years



- Pankaj Jain (Founder & MD) and Haryana-State industrial development corporation sign a joint-sector agreement for production of import substitute chemicals, focused on leather and textiles

1987: A Partnership Forms

- Haryana Leather Chemicals Ltd. sign a technology-transfer agreement with ICAP-SIRA, Italy and Smit & Zoon, Holland



1992: A Major Step in Emulsion Polymerization

- Haryana and ICAP-SIRA expand their partnership to develop acrylic emulsion
- ICAP-SIRA's financial and technological investments support HARYANA in building acrylic emulsion laboratory and manufacturing set-up

2000: Crossing international borders



- HARYANA is granted permission to set-up a 100% EOU facility
- Export of its specialty chemicals, including acrylics, begins to China, Bangladesh, Indonesia, eventually expanding to 20+ countries across the globe

2005: Focus on sustainability

- Re-map of all processes to define clear and actionable sustainability goals
- By 2010, achieve 500% reduction of waste-water, leading to ZLD – zero-liquid discharge status
- By 2015, transition from solvent-based coatings to water-based coatings and polymers – Haryana becomes the 1st to develop water-based PU dispersions

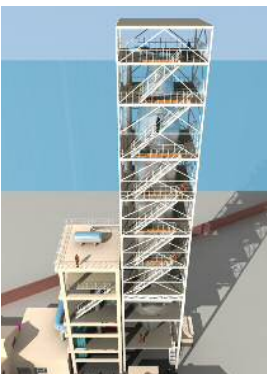


2012: A Major Pivot: Innovation in PVC Additives

- Diversify acrylics beyond leather application, seeing the growth trends in PVC globally
- Develop V1.0 of Acrylic Impact Modifier and Processing aids through in-house lab set-up of polymer emulsions and spray-drying

2013: Growing our Capacity

- After successful lab trials, set-up our iconic 4000 MT p.a pressure-nozzle spray-tower dedicated for PVC additives
- Launch PVC Additives branded under “Paracryl” series
- Ongoing R&D on controlling product parameters and performance



2024: Progress + Set-up of Akrolon

- Deep-dive study to optimize product quality and meet highest international standards for impact Strength and Fusion Time
- Re-brand to AKRELON to prioritize PVC additives as an independent division within HARYANA's setup
- Set-up clear mission to provide Indian PVC processors with high-quality indigenous PVC additives – Expand techno-commercial team to 10+ individuals across globe



MESSAGE FROM THE MANAGING DIRECTOR

Diversifying into PVC

Building on our legacy on acrylics with ICAP -SIRA Italy and our deep understanding of spray drying, we started our research into PVC additives, back in 2012, with one mission – to make our mark in Asia's PVC growth story with the highest quality PVC additives.

AKRELON, our new business division for PVC additives, reflect three core values:

Innovate...

From our founding years, we have learnt the value of investing in the world's best research equipment. Our PVC application lab and R&D center boast an unparalleled array of test equipment. We meticulously examine over 30 parameters - from the QC of monomers, catalysts and surfactants; to the in-process tests during polymerization, and finally right through to the final powder properties.

Excel...

Our PVC additives have been tested across numerous PVC applications to ensure fusion and impact parameters match that of the global best-in-class products.

Besides the product excellence, workforce satisfaction, safety and sustainability command equal attention:

Since 2023 PVC spray-drying uses Swedish LPG with nearly zero emission

Recently re-assigned 5% of our earnings to reward and recognitions of our employees

Automation in monomer storage and transfer reduced handling hazards.

Deliver Value...

We invite our customers to experience growth. Count on our PVC experts for support, explore our application lab for seamless product testing and the latest trends in PVC processing. We want to empower you with technology and solutions to revolutionize your specific industry and foster sustainable growth. Discover how we "Deliver Value."

PANKAJ JAIN

Founder and MD
Gold Medalist Production Engineering

OUR PRODUCTION FACILITY: IN HARYANA

Pre-Production

Over 100kL Class A underground storage of monomers like BA, MMA with breather valves to ensure highest safety standards. The tanker gets unloaded directly into the underground tanks without any manual intervention

Acrylic Emulsion Polymerization

Best-in class 316 SS system (of reactors, mixers, intermediate solution preparation) with high-efficiency condenser. Automated controllers for temperature, monomer feed rate, IFM flow controllers. The operators are able to continuously monitor and observe how the monomer is polymerizing

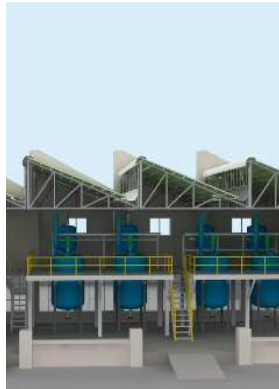
Spray-Drying

The liquid emulsion is then taken to spray-dryer to evaporate the water and produce fine free-flowing powder. Within our spray tower, atomization takes place through high-pressure nozzle system. Powder is collected via pneumatic conveying and cooling system. The exhaust air is filtered for dust particles via pulse-bag filters before being released.

Packaging and QC

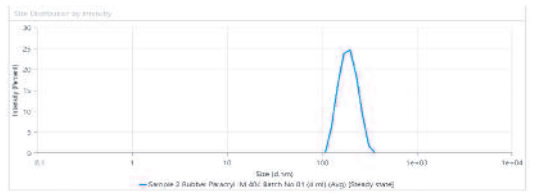
From the spray dryer, the powder is packed in high density PP bags with inner PE-liner to ensure safety in storage and transportation. Multi-line Quality Check system to test physical properties (such as powder particle size, bulk density, color, Intrinsic Viscosity/MW) and mechanical properties (such as fusion time, impact and tensile strength) for EACH batch produced

From Concept



To Reality





OUR RESEARCH AND INNOVATION FACILITY:

Our PVC product and application on-site labs are fully equipped with high-precision equipment and technical staff with over 30 years of experience. Our tools and in-house experts have the primary focus on innovation, research and quality control of our products.

Pre-Production Tests:

Initiator: Auto-titration – purity and active content

Surfactant: Auto-titration – purity SO₂, pH and active content

Monomer: Gas Chromatography – purity, Inhibitor test

During Production Tests:

Monomer Conversion Rate

Moisture Balance

pH Control

Viscosity Monitoring

Post Production Tests:

Physical Properties:

Color Spectrophotometry

Bulk Density

Intrinsic Viscosity/Molecular Weight

Clarity in Toluene

Xenon Arc Weathering

Mechanical Properties:

Processing Equipment: Two-Roll Mill,

Hot Compression Press,

Sample Sizer, Notch Cutter

Tensile Strength

Izod Impact Strength

Rheological Testing:

Fusion Time and Torque Parameters

Heat Stability or Degradation

PRODUCT RANGE: APPLICATION CHART

			Applications								
			Fittings/ Injection Moulding	Window Profiles	Pipes	Rigid PVC Sheet	Clear Rigid & Semi - Rigid Films	Composites: High Filler Applications (SPC/WPC/ Panels)	Foam (Sheets, Profile, Core Pipe)	Foam Board	
AKRELON Products		Target IV (Molecular Weight)									
Impact Modifier	IM 405		+++	+++	+++	+++	+	+++	+++	+++	
Processing Aids	Lubricating	PA L175	0.5 - 1.0	+++	+++	+++	+++	+++	+++	+++	
		PA L180	1.0-1.2	+++	+++	+++	+++	++	+++	+++	
	General Purpose	PA 220	2.2 - 2.8	++	+++	+++	+++	+++	++	^ ++	^ ++
		PA 120	3.5 - 4.0	++	++	+++	+++	++	+++	^ ++	^ ++
		PA 125	4.0-4.5	+++	++	++	++	+++	++	+++	++
		PA 400	5.5 - 6.5	++	++	++	++	++	++	+++	+++
	Foam Regulators	PA 490	9.5-10.5	+	+	+	+	+	+	+++	+++
		PA 990	11.0-12.0	+	+	+	+	+	+	+++	+++

+++	Strongly recommended
++	Recommended
+	Generally not applicable

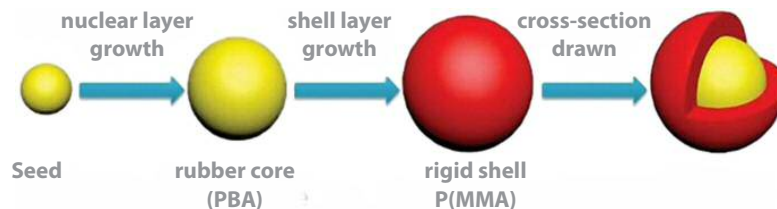
^ Used typically in combination with foam regulators

Please reach out to us to tailor our product range for your specific applications



ACRYLIC IMPACT MODIFIER: AKRELON IM 405

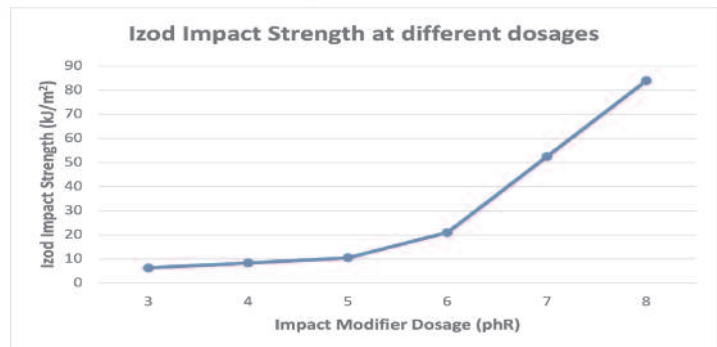
Our IM 405 is our newest Acrylic Impact Modifier based on a unique “Core - Shell” acrylic molecular composition that imparts excellent impact strength, proven weatherability, flawless surface finish and ease of processing to outdoor and highly durable Vinyl and C-PVC applications:



KEY FEATURES :

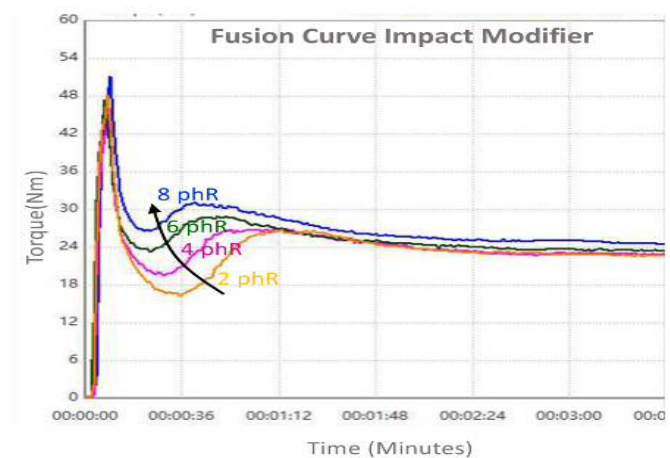
1. Highest Impact Strength:

- It is optimized to ensure required impact strength in compounds formulated with lead, tin and calcium-zinc or other mixed metal stabilizers.
- This allows it to have lower melt viscosity and less die swell, thanks to its perfectly balanced formulation and “Core – Shell” structure.



2. Fast fusion time:

- Fusion properties are balanced to give PVC compounds an optimum ease of processing and excellent surface gloss.
- It helps to maintain an improved dimensional precision with its minimized die swell and post extrusion shrinkage properties.



3. Excellent Weathering:

- Thanks to its superior weatherability, it is highly suitable for outdoor applications, and highly durable Vinyl and C-PVC.
- It does not cause impact strength loss or discoloration under prolonged UV exposure.

PROCESSING AIDS LINE-UP :



	Type	Akrelon Grade	Intrinsic Viscosity (Molecular Weight)	DESCRIPTION
Low molecular weight	Lubricating Processing Aids	L175	0.5-1.0	<ul style="list-style-type: none"> ▪ Excellent metal release property ▪ Increased output rate ▪ Improved thermal stability ▪ Highest optical property
		L180	1.0-1.2	<ul style="list-style-type: none"> ▪ Excellent metal release property ▪ Increased output rate ▪ Improved thermal stability
Medium molecular weight	General Purpose Processing Aids	220	2.2-2.8	<ul style="list-style-type: none"> ▪ Fast fusion ▪ High melt strength & surface gloss
		120	3.5-4.0	<ul style="list-style-type: none"> ▪ Fast fusion, high melt strength ▪ Easy dispersion in high-filler applications
		125	4.0-4.5	<ul style="list-style-type: none"> ▪ Superior melt elasticity and better dimensional stability ▪ Best for transparent application ▪ Specially designed for injection molding
		400	5.5-6.5	<ul style="list-style-type: none"> ▪ Excellent melt strength & homogeneity ▪ Controlled die swell ▪ Good transparency
High molecular weight	Foam Regulator	490	9.5-10.5	<ul style="list-style-type: none"> ▪ Excellent melt strength & homogeneity ▪ Controlled die swell ▪ Uniform cell structure
		990	11.0-12.0	<ul style="list-style-type: none"> ▪ Excellent melt strength & homogeneity ▪ Controlled die swell ▪ Uniform cell structure ▪ High output rate and ease of processing in thick foam applications

HOW WE CAN SUPPORT YOU

Technical Services

We offer our technical service to a wide variety of PVC processors and one-pack producers. It includes quality improvement, cost reduction and formulation review and development.

On-site Support

We are willing to send our technical personnel to your manufacturing plant or lab testing facility to test out our PVC additives within your existing or proposed formulation.

Application Lab

With the help of our application lab in Jind, Haryana we can show you our products in-action with standard formulations. We can conduct end-user testing and adjust formulations as necessary.

Panels	
PVC K 65 - 67	100
CaCO ₃	50 - 100
Acrylic Impact Modifier	0 - 6
TiO ₂	4 - 6
Acrylic Processing Aid	1 - 2
Lubricating PA	0,2 - 0,5
External Lubricant	1 - 1,5
Internal Lubricant	1 - 1,5
Ca-Zn Stabilizer	4 - 5




We would like to hear from you:

REACH US AT:

connect@akrelon.com
+91 124 2739000

VISIT US AT OUR WEBSITE:

www.akrelon.com

Corporate Office:

Akrelon / Haryana Leather Chemicals Ltd.
1405 B | Signature Towers | South City-1 | Gurugram-122001 | INDIA

Manufacturing Unit:

Akrelon / Haryana Leather Chemicals Ltd.
72-77 | HSIIDC Industrial Estate | Hansi Road | Jind - 126102 | INDIA