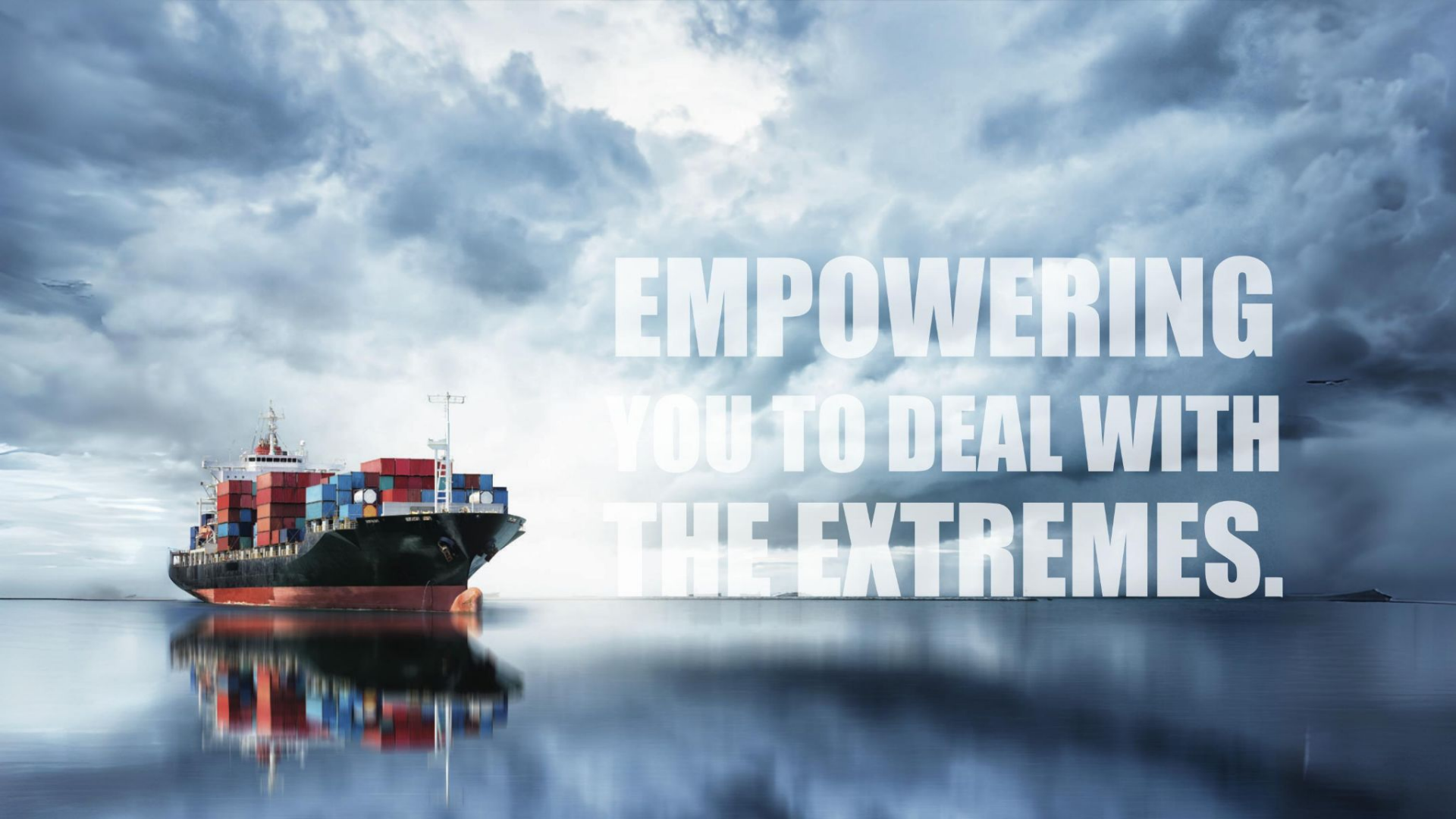
EPOXY HARDENERS

OXXYY
GROUP OF COMPANIES

ISO 9001:2015

D-U-N-S® Number
91-454-5946


EMPOWERING
YOU TO DEAL WITH
THE EXTREMES.

About Us - Speciality Division

Oxxyy Group of Companies has a rich history of fostering global partnerships and expanding the reach of businesses worldwide. With associate offices strategically positioned across the USA, Canada, the Middle East, Far East, South America, Europe, and India, Oxxyy Group facilitates seamless access to international markets. This expansive network empowers Indian entrepreneurs and businesses to thrive on the global stage. The expertise, experience, and extensive network of Oxxyy Group's founder, Mr. Rajeshkumar, make him an invaluable resource for companies aspiring to grow and succeed globally.

Our epoxy hardeners manufactured at our state of the art facility in the industrial suburb of Vadodara, Gujarat in India. The operations facilities are managed by a team of young, but fairly experienced professional whose core values are engulfed in always being sensitive to the clients' needs. Our business offices are backed by both technical and professional staff which is trained for efficient communication within our operation, with our supplier groups and with our customer with an equal fervour. This helps us to provide effective supply protection to our clients whilst maintaining a smooth flow of our own material. Following are some of our main business goals:

- To help our clients to pioneer technologies.
- To remain a preferred supplier over our competition.
- Maintain high regard for commitment and clear dealings.
- To always work towards the betterment of our working conditions and policies.
- To strive on reducing our environmental impact.
- To ensure equal growth for everyone working with us


WITH
STRENGTH

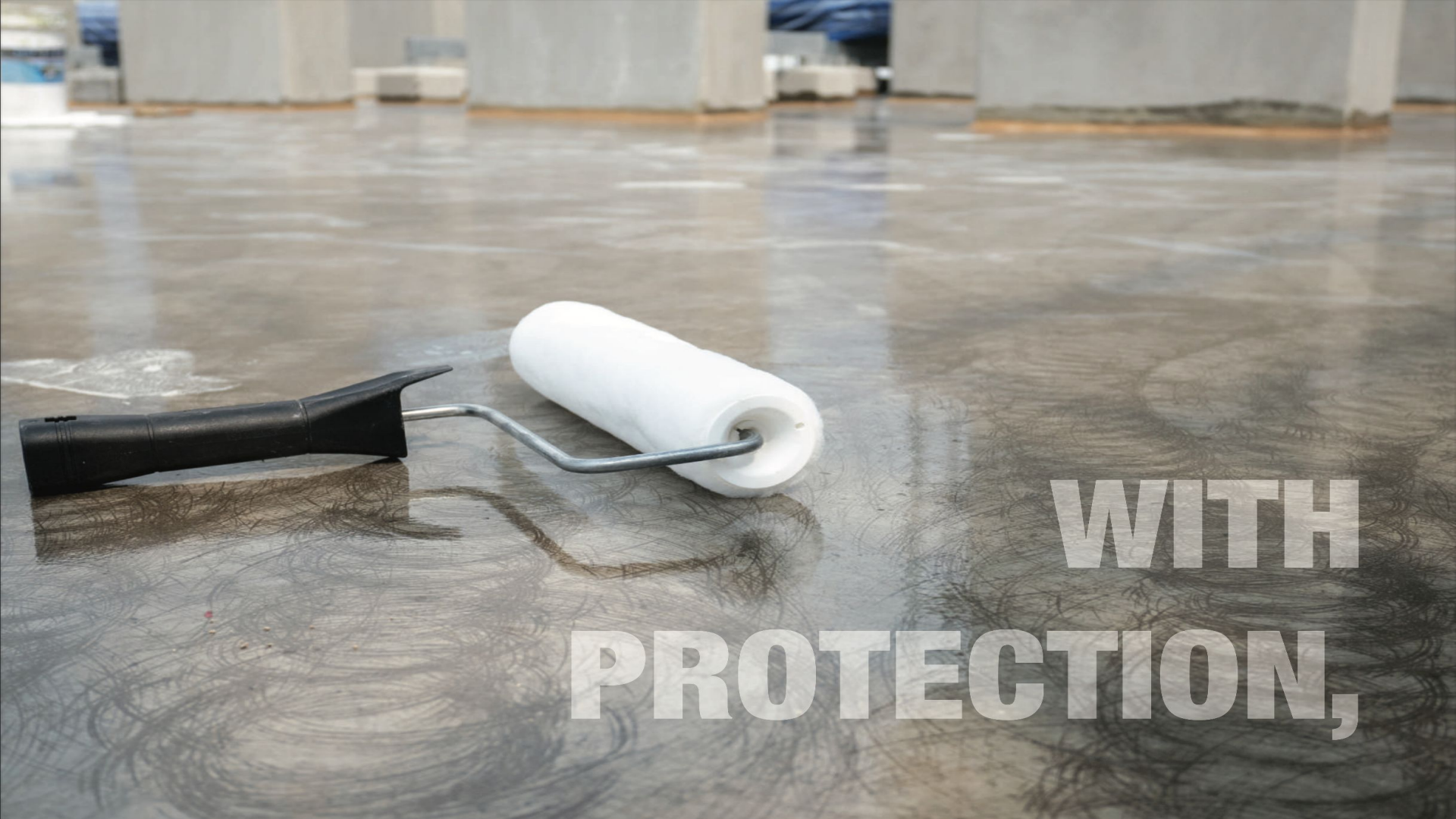
Tech Talk

Our range of epoxy hardeners is targeted primarily at the coatings industry. We understand very well that the coatings industry is driven by research, and hence we keep product development at the forefront of our affairs. Experimenting with different eco-friendly materials, exploring cleaner production technologies and maintaining strict emission norms have been identified as the basis of our primary technical targets since inception.

A look across our product range will immediately reflect the fact that we are a company that is very conscious of today's environmental challenges. A majority of our product range involves either replacing or reciprocating petrochemicals by using renewable tertiary raw materials. Even apart from the formulation itself, our production techniques are continuously evolving to accommodate larger scope for recycling waste and reducing consumables and emissions.

Apart from our standard products we provide reliable after-sales support, and tailor-made products. We enjoy taking up challenges so that our clients can become pioneers of their industry. We firmly believe that progress can only be mutual and binding, and when our formulators can deliver on newer goals by using our tailor-made hardeners, it is a winning situation for everyone involved.
Our standard product range of epoxy hardeners is spread across the following categories:

- Phenalkamines
- Phenalkamine adducts
- Reactive polyamides
- Cycloaliphatic polyamines


WITH
PROTECTION,

Phenalkamines

Phenalkamines are a product of mannich reactions of Cardanol, Formaldehyde with different amines. Cardanol is a purified version of CNSL which is short for Cashew Nut Shell Liquid and forms the major raw material for Phenalkamines and Phenalkamine adducts. Since CNSL is an renewable biomaterial, Phenalkamines are the more environmentally friendly alternative to conventional phenolic and mannich curing agents.

The cardanol molecule is comprised of an aromatic ring with OH group and a long aliphatic side chain. This gives Phenalkamines some inherent properties that most other hardeners do not possess. Phenalkamines are increasingly becoming the benchmark for performance across all epoxy system components. They have helped coatings formulators to develop systems can be applied in cold atmospheric curing conditions while not compromising on the pot life.

Phenalkamine curing agents offer durability, superior edge retention and corrosion resistance. The high solid and low viscosity of Phenalkamines enables the formulation of environment friendly protective coatings with low VOC and efficient costing and good inter-coat time windows.

Phenalkamines

Advantages of Phenalkamines :

- Superior corrosion resistance
- Rapid cure at ambient as well as low temperatures
- Good chemical resistance especially against acids and alkalis
- Excellent water resistance
- Moisture resistance during curing
- Non critical mixing ratio
- Good adhesion to poorly prepared substrates
- Compatible with most resins and solvents

Applications :

- Heavy duty protective coatings
- Marine and off-shore coatings
- Concrete primers
- Tank linings
- Pipe coatings
- Epoxy grouts
- Construction chemicals
- Mortar


WITH
INNOVATION

Reactive Polyamides

The condensation reaction between dimerised fatty acids or polymerised fatty acid and diamines is a simple technique used to make polyamides. This helps to overcome the volatility, irritability and critical loading issues of conventional amines. Reactive polyamides offer ambient cure, low toxicity, good strength and flexibility. They are also known for long pot life with good corrosion resistance.

Polyamides help impart high tensile strength and compressive strength doe to a high percentage of hydrocarbon in their molecules. They offer good adhesion to a wide variety of substrates and also exhibit superior blush resistance.

Reactive polyamides have been the "go to" hardener for formulators across a very wide range of industrial and commercial applications and continue to form the backbone of the coatings industry.

Reactive Polyamides

Advantages of Polyamides :

- Good impact resistance
- High flexural strength
- Good compressive and tensile strength
- Excellent adhesion to a wide variety of substrates
- Long pot life
- Good inter-coat adhesion
- Water resistance
- Good electrical resistance

Applications :

- Protective coatings
- Concrete primers
- Tank linings
- Pipe coatings
- Adhesives
- Construction chemicals
- Laminates
- Castings


AND
PERSEVERENC

Cycloaliphatic Polyamines

Cycloaliphatic polyamines offer high performance of aromatic amines together with the relative ease of mixing of the aliphatic amines. Epoxy systems that are based on these curing agents have good thermal resistance and over all robustness. They also exhibit double the percentage of elongation compared to its aliphatic counterparts.

Furthermore, they offer excellent gloss retention, color and good levelling properties. Cycloaliphatic polyamines also impart good chemical resistance and are known to have relatively low water absorption.

Their major drawback is they are completely based on petrochemicals and do not have any renewable biomass as raw material.

Cycloaliphatic Polyamines

Advantages of Polyamides :

- Excellent color
- Excellent color retention
- Excellent chemical resistance
- Good water resistance
- Good inter-coat adhesion
- Good pot life
- High gloss
- Low blush

Applications :

- Floor top coats
- Pipe linings
- Potable water coatings
- Casting and tooling
- Adhesives
- Filament winding
- Laminates
- Moulding

Cross Product Comparison

	Phenalkamine	Polyamide	Cycloaliphatic Polyamine
Low temperature cure	★★★★★	★★	★★★
Humid cure	★★★★★	★★	★★★
Pot life	★★★	★★★★★	★★
Color	★★	★★★	★★★★★
Flexibility	★	★★★★★	★
Corrosion resistance	★★★★★	★★★	★★★
Water resistance	★★★★★	★★	★★★★
Chemical resistance	★★★	★★★★★	★★★★
Adhesion	★★★★★	★★★★★	★★★★★

Phenalkamines

Grade	Max Colour (Gardner)	Viscosity (mPas)	Solids%	Amine Value mgKOH/gm	AHEW g/eq	PHR	Thin Film Dry hard time 200µ WFT (hours) with Epotec YD 128			Applications			
							25°C	5°C	0°C	Marine Coating	Primers	Industrial Coating	Concrete flooring
ONYFLOW® 9133	17	2000-4000	Solvent free	490-535	84	45	4	10	17	✓		✓	✓
ONYFLOW® 9141	17	20,000-50,000	Solvent free	300-320	130	68	6	15	27	✓		✓	
ONYFLOW® 9141 LA	17	20,000-50,000	Solvent free	280-300	129	68	7	18	30	✓		✓	
ONYFLOW® 9141 LV	17	1500-3000	Solvent free	310-345	125	65	7	16	21	✓		✓	
ONYFLOW® 9141 X90	17	3000-6000	90	265-315	144	75	6	11	23	✓		✓	
ONYFLOW® 9158	17	500-1500	Solvent free	320-350	114	60	8	23	33	✓	✓	✓	✓
ONYFLOW® 9130	17	1500-3000	Solvent free	380-410	95	50	4	14	19	✓		✓	✓
ONYFLOW® G33	12	2000-4000	Solvent free	490-535	84	45	4	10	18	✓		✓	✓
ONYFLOW® G41	12	20,000-50,000	Solvent free	300-320	130	68	6	15	27	✓		✓	
ONYFLOW® G41 LA	12	20,000-50,000	Solvent free	280-300	129	68	7	18	30	✓		✓	
ONYFLOW® G41 LV	12	1500-3000	Solvent free	310-345	125	65	7	16	21	✓		✓	
ONYFLOW® G41 X90	12	3000-6000	90	265-315	144	75	6	11	23	✓		✓	
ONYFLOW® G58	10	500-1500	Solvent free	320-350	114	60	8	23	33	✓	✓	✓	✓

PHR is calculated for Epoxy Resin with EEW = 190 unless specified otherwise.

Phenalkamines Adducts

Grade	Max Colour (Gardner)	Viscosity (mPas)	Solids%	Amine Value mgKOH/gm	AHEW g/eq	PHR	Thin Film Dry hard time 200µ WFT (hours) with Epotec YD 128			Applications			
							25°C	5°C	0°C	Marine Coating	Primers	Industrial Coating	Concrete flooring
ONYFLOW® 9180	17	3000-5000	78-82	200-250	190	100	3	8	11	✓		✓	
ONYFLOW® 9177	17	1000-2500	68-74	160-230	162	85	3	10	18	✓		✓	
ONYFLOW® 9118	17	700-1200	78-82	150-190	190	100	2	8	11	✓		✓	
ONYFLOW® 9117	17	8000-9000	74-76	200-240	151	79	3	9	14	✓	✓	✓	
ONYFLOW® 9111	17	7000-12000	74-76	210-230	151	79	2	6	10	✓	✓	✓	✓
ONYFLOW® 9162	17	500-2000	64-66	160-200	180	98	4	7	10	✓	✓	✓	✓
ONYFLOW® 9160	17	500-1200	58-62	150-180	190	98	10	14	28	✓		✓	
ONYFLOW® G82	12	1000-3000	78-82	200-250	190	100	2	7	11	✓		✓	✓
ONYFLOW® G62	12	500-2000	64-66	160-200	180	98	4	7	10	✓	✓	✓	✓
ONYFLOW® G77	12	1000-2500	68-74	160-230	162	85	3	10	18	✓		✓	
ONYFLOW® G11	12	7000-12000	74-76	210-230	151	79	2	6	10	✓	✓	✓	✓

PHR is calculated for Epoxy Resin with EEW = 190 unless specified otherwise.

Reactive Polyamides

Grade	Max Colour (Gardner)	Viscosity (mPas)	Solids%	Amine Value mgKOH/gm	AHEW g/eq	PHR	Thin Film Dry hard time 200µ WFT (hours)	Applications			
							@25°C with DER 675x75	Marine Coating	Industrial coating	Composites	Construction Concrete
ONYFLOW® 7215	10	50,000-75000 (@40°C)	Solvent free	230-260	240	99	12	✓	✓		
ONYFLOW® 7215 X70	9	800-2000	70	160-182	260-340	57 (X75 epoxy)	11	✓	✓		
ONYFLOW® 7225	9	8000-12000 (@40°C)	Solvent free	330-360	124	65	5	✓	✓		
ONYFLOW® 7240	10	3000-6000 (@40°C)	Solvent free	370-400	90-100	50	5	✓	✓	✓	✓
ONYFLOW® 7275	10	500-1000	Solvent free	390-450	95-115	50	12-14	✓	✓		

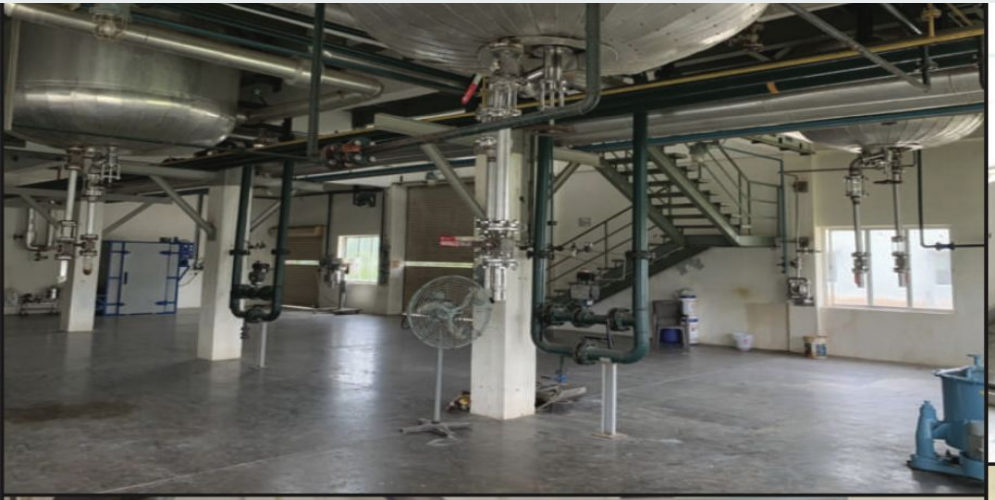
PHR is calculated for Epoxy Resin with EEW = 190 unless specified otherwise.

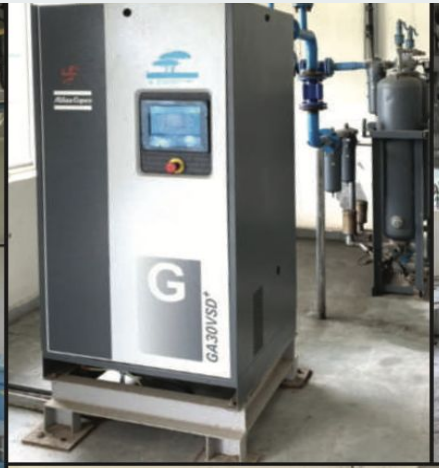
Cycloaliphatic Polyamine

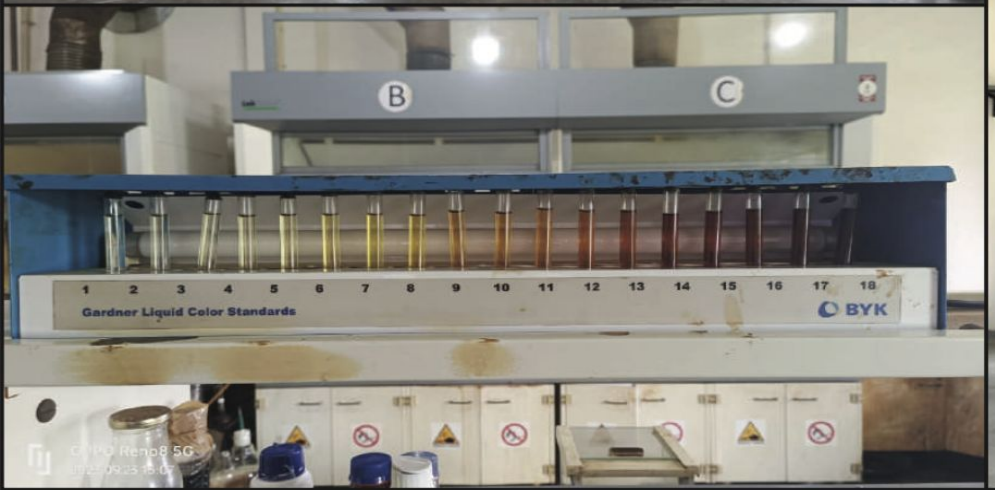
Grade	Max Colour (Gardner)	Viscosity (mPas)	Solids%	Amine Value mgKOH/gm	AHEW g/eq	PHR	Thin Film Dry hard time 200µ WFT (hours)	Applications		
							@24°C with Epotec YD 128	Flooring	Industrial coating	Tank Lining
ONYFLOW® 1818	2	300-600	Solvent free	250-290	115	60	6	✓	✓	✓
ONYFLOW® 5656	2	100-300	Solvent free	300-325	94	50	6	✓		
ONYFLOW® 5040	2	200-400	Solvent free	300-320	94	50	6	✓		
ONYFLOW® F205	2	600-700	Solvent free	280-320	95	50	7	✓		✓

PHR is calculated for Epoxy Resin with EEW = 190 unless specified otherwise.

Plant Images







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