

HANJIN CHENICAL Paint & Resin

PAINT

Industrial coatings Construction coatings Waterborne & Water soluble coatings Waterborne epoxy coatings

SYNTHETIC RESIN

Alkyd resin Acryl resin Amino resin Water soluble resin Waterborne epoxy resin Hanjin Chemical Paint & Resin About Company

CEO Message

"DREAMING WITH CUSTOMERS TOMORROW, HANJIN CHEMICAL WILL CREATE THE VALUE OF HAPPY LIFE."

Hanjin chemical started with the manufacture of paints and resins, and now we are expanding our business into adhesives through challenges and innovations.

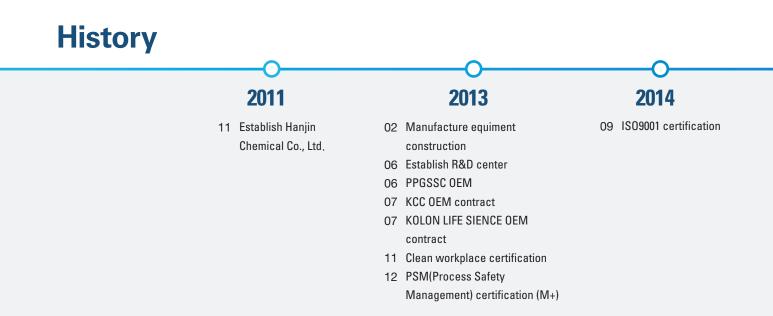
Especially, we are contributing to the increase of domestic and export by developing eco-friendly water soluble epoxy resin and paint, which contributes to enhance the competitiveness of the company and raise the status of the domestic chemical industry.

Hanjin chemical will respond to changes and pursue sustainable growth. Furthermore, Hanjin chemical will do the best we can for each employee's happiness and better future value.

Vision

"CONSTANT GROWTH FOR HAPPINESS"

Leading change, pursuing sustainable growth, contributing to the pursuit of happiness of all employees and the development of human society.



Core Value

Safety

Prevent all predictable risk factors in advance and ensure continuity of happiness.

Enthusiasm

Always be with the happiness and growth of our customers.

Customer

Do not be afraid of failing, loving what you do.

Challenge

Setting a worthy goal and pursuing newness with endless effort.

2015

10 Upgrading of PSM(Process Safety Management) certification (S)

2016

08 AK CHEMTECH adhesive contract

2017

02 Korea chemical control act(KCCA) suitability

- 07 JOTUN antifouling agent contract
- 09 ISO9001 certification (renewed in 2015)

2018

05 INNO-BIZ certification 10 NOROO PAINT OEM contract

PAINT

INDUSTRIAL COATINGS
CONSTRUCTION COATINGS
WATERBORNE & WATER SOLUBLE COATINGS

WATERBORNE EPOXY COATINGS

1. Industrial coatings

| - | Tuno | | Code | | g tim | Film thickness | Theoretical coverage | Characteristic | Application |
|------------------|--------|--------|---------|-----------------|---------------|-------------------|----------------------|---|---|
| | Туре | | Coue | Set to touch | Dry though | unckness (μm) | (m²/L) | Characteristic | Аррпсацон |
| Stoving | Primer | | HSK2199 | 130℃ | 130℃X20m | | 16.8 | Antirust, Adhesion | Steel furniture, Agricultural machinery, Electronic appliances |
| alkyd | Тс | р | HSK2695 | 130°C | X20m | 30-40 | 12-13 | Workability, Gloss, Color retention | Steel furniture, Agricultural machinery, Metal substance |
| Charrier | Prir | ner | HSC1811 | 150℃ | X15m | 10-30 | 40-45 | Adhesion, Antirust | Electronic appliances, Elevator |
| Stoving acryl | Тс | р | HSC1661 | 150℃ | X20m | 30-40 | 13.3-15 | Gloss, Color retention, Chemical resistance, Weather resistance | Electronic appliances, Metal substance |
| | Prir | ner | HPA2100 | 1h | 6h | 30 | 16.6 | Antirust, Adhesion | Steel structure |
| Alkyd | | | HPE2120 | 2h | 8h | 30 | 12.7-14 | Air drying, Hiding power, Workability | Steel and wood |
| | Тс | р | HPE2100 | 30m | 1h | 30 | 12.5-14.5 | Quick drying, Hiding power | Steel furniture, Steel machinery, Recycled drum |
| | Primer | | HUP1171 | 30m | 4h | 30 | 13.8 | Workability, Adhesion, Antirust | Heavy industrial equipment |
| | | | HUP1195 | 20m | 2h | 35 | 11 | Quick drying, Adhesion, Antirust | Heavy industrial equipment |
| | Mic | ldle | HUM1271 | 30m | 4h | 30 | 15.7 | Quick drying, Adhesion, Abrasivity | Heavy industrial equipment |
| Urethane | | | HUT1571 | 20m | 4h | 40-50 | 9.3-10 | Interior use, Quick drying, Gloss | Interior of steel, Repair painting of industrial stoving paint |
| | Тс | р | HUT1578 | 5m | 3h | 30-40 | 12 | Exterior use, Quick drying, Gloss | Repair and Final coating for steel and plastic |
| | | | HUT1557 | 20m | 5h | 40-50 | 10 | Exterior use, Quick drying, Gloss, Chemical resistance, Durability | Heavy industrial equipment |
| | 200℃ | Primer | HRP3000 | 180°C | ×20m | 20 | 18 | Heat resistance | Boiler, Heater, Shipping engine |
| | 200 C | Тор | HRT2000 | 200℃ | C×1h | 25 | 16 | Heat and Weather resistance | Boiler, Heat exchanger |
| | 300℃ | Primer | HRP3000 | 180°C | ×20m | 20 | 18 | Heat resistance | Boiler, Heater, Shipping engine |
| Heat | 300 C | Тор | HRT3000 | 180°C | ×20m | 20 | 18 | Heat and Weather resistance | Boiler, Heater, Shipping engine |
| resistance | 400℃ | Primer | HRP6000 | 200°C | C×1h | 20 | 17.5 | Heat resistance | Boiler, Heater, Shipping engine |
| | 400 C | Тор | HRT4000 | 200℃ | C×1h | 20 | 11-14 | Heat and Weather resistance | Boiler, Heater, Shipping engine |
| | 600℃ | Primer | HRP6000 | 200°C | C×1h | 20 | 17.5 | Heat resistance | Boiler, Heater, Shipping engine |
| | 0000 | Тор | HRT6000 | 200°0 | C×1h | 20 | 13-18 | Heat and Weather resistance | Boiler, Heater, Shipping engine |

| | Туре | | | Dryir | ng tim | Film | Theoretical | | |
|---------|--------|-------------------------|---------|-----------------|---------------|-------------------|---|--|---|
| | | | Code | Set to touch | Dry though | thickness (µm) | coverage (m²/L) | Characteristic | Application |
| | Primer | Solvent type | HEP4210 | 2h | 24h | 50 | 6.2 | Adhesion, Chemical resistance, Abrasion resistance | Concrete floor |
| EPOXY | | Solvent type | HEF4210 | 1h | 8h | 50 | 11 | Adhesion, Chemical resistance | Concrete floor |
| | Тор | Non- solvent type | HEF4220 | 3h | 17h | 2000 | 0.48 | Self-leveling, Antifoaming, Chemical resistance, Durability | Concrete floor |
| | Pri | mer | HKP2112 | 1h | 9h | 30 | 17 | Penetration, Antirust | Steel structure such as bridge, construction |
| Enamel | т | | HKT2330 | 30m | 4h | 30 | 16 | Quick drying, Adhesion, Water resistance, Oil resistance | Steel furniture and steel machinery |
| | I | Тор | | 30m | 4h | 30 | 15-16.7 | Quick drying, Adhesion, Hiding power, Durability | Steel furniture and steel machinery |
| | Pri | mer | HLS2900 | 10m | 1h | 30 | 7 | Quick drying, Adhesion, Abrasivity | Wooden furniture, Wooden parts of the interior |
| Lacquer | т | | HLT2951 | 10m | 40m | 30 | 9.3 | Quick drying, Adhesion, Film toughness | Wooden furniture, Wooden parts of the interior |
| Т | oh | HLT2961 | 20m | 50m | 30 | 9.3-11.3 | Adhesion, Water resistance, High build, Hiding power | Wooden furniture, Wooden parts of the interior | |

2. Construction coatings

3. Waterborne & Water soluble coatings

| | Туре | | | Dryin | ıg tim | Film | Theoretical | | |
|------------------|----------|--------|----------|-----------------|---------------|-------------------|--------------------|---|---|
| | | | Code | Set to touch | Dry though | thickness (µm) | coverage (m²/L) | Characteristic | Application |
| | Concrete | Primer | HPE8100P | 30m | 20h | 30 | 10 | Adhesion, Chemical resistance, Abrasion resistance | Concrete floor |
| Waterborne | floor | Тор | HPE8100T | 30m | 20h | 80 | 5.5~6.5 | Adhesion, Chemical resistance, Durability | Concrete floor |
| ероху | Steel | Primer | HPE8200P | 30m | 20h | 40~60 | 10 | Adhesion, Chemical resistance, Antirust | Transformer, Heavy electric machine, General steel |
| | Steel | Тор | HPE8200T | 40m | 24h | 30~40 | 10~12 | Salt water resistance , Oil resistance, Abrasion resistance | Interior and exterior of steel |
| Water-based | Exterior | | HWI8510 | 30m | 1h | 40 | 10.3 | Adhesion, Weather resistance, Abrasion resistance | Concrete, Cement mortar |
| vvaler-baseu | Interior | | HWI8513 | 1h | 2h | 30 | 13.3 | Adhesion, Water resistance | Concrete, Cement mortar, Wood, Steel |
| Water soluble | Steel | Primer | HPB8101 | 1 20 °C | ×10m | 10~20 | 20 | Adhesion, Water solubility, Quick drying, Corrosion resistance | Square pipe, Deck plate, C section steel |





4. Waterborne epoxy coatings (TDS)

1. DESCRIPTION

HPE Series are two-pack waterborne curing agent cured epoxy paints for floor primer & top and steel primer coatings, the coating film exhibits excellent performance in adhesion, mechanical properties, chemical resistance, water resistance and salt water resistance.

2. TYPICAL PROPERTIES

| No | ITEMS | HPE8100 | HPE8200 | | |
|----|-------------------------|------------------------------|------------------|--|--|
| 1 | Color | Green / Gray | Gray / Red Oxide | | |
| 2 | VOC (g/ℓ) | 95 ~ 105 | 80 ~ 100 | | |
| 3 | Volume Solid (Wt.%) | 42 ~ 45 | 50 ~ 55 | | |
| 4 | Viscosity (KU, 25°C) | Viscosity (KU, 25°C) 60 ~ 70 | | | |
| 5 | Specific Gravity (25°C) | 1.20 | 1.30 | | |
| 6 | Set to Touch (Min) | 30 | 30 | | |
| 7 | Dry-Through (Hr) | 20 | 20 | | |

3. ADVANTAGES

- Low VOC
- Excellent water resistance
- Long pot life (above 5hrs)
- High gloss
- Excellent adhesion and film hardness

4. APPLICATION

- Floor coatings
- Industrial maintenance
- Transportation
- Agricultural and construction equipment

SYNTHETIC RESIN

- · ALKYD RESIN
- ACRYL RESIN
- AMINO RESIN
- WATER SOLUBLE RESIN
- WATERBORNE EPOXY RESIN



1. Alkyd resin

| Code | Non Volatile Content(%) | Solvent | Viscosity | Acid Value | Color | Oil Length / Modification | Characteristic | Application |
|---------|----------------------------|----------------------------|-----------|---------------|-------|------------------------------|--|---|
| HR-2016 | 58-60 | Xylene | Z3-Z5 | 16↓ | 8↓ | Short | Hardness, Gloss | NC lacquer, Stoving enamel |
| HR-2039 | 49-51 | Xylene / Mineral Spirit | Z1-Z3 | 16↓ | 10↓ | Short | Hardness, Gloss, Weather resistance | NC lacquer, Stoving enamel |
| HR-2201 | 49-51 | Mineral Spirit | Z4-Z6 | 20 ↓ | 10↓ | Medium | Adhesion, Mechanical properties | Air drying enamel, A/M under body |
| HR-2202 | 49-51 | Mineral Spirit | Z2-Z4 | 10↓ | 10↓ | Medium | Adhesion, Mechanical properties | Air drying enamel |
| HR-2270 | 59-61 | Mineral Spirit | Z2-Z4 | 10↓ | 11↓ | Medium | Adhesion, Mechanical properties | Air drying enamel |
| HR-2273 | 69-71 | Mineral Spirit | Z5-Z7 | 10↓ | 11↓ | Long | Adhesion, Mechanical properties | Air drying enamel |
| HR-2701 | 50-52 | Xylene | V-X | 12↓ | 8↓ | Acryl | Fast drying, Hardness | Fast air drying enamel |
| HR-2702 | 59-61 | Xylene | Z-Z2 | 12↓ | 8↓ | Acryl | Fast drying, Hardness | Fast air drying enamel |
| HR-2703 | 63-65 | Xylene | Z1-Z3 | 15↓ | 6↓ | Acryl | Fast drying, Hardness | Fast air drying enamel |
| HR-2706 | 62-64 | Xylene | Z1-Z3 | 12↓ | 7↓ | Acryl | Fast drying, Hardness | Fast air drying enamel |
| HR-2707 | 55-57 | Xylene / Toluene | X-Z | 14↓ | 7↓ | Acryl | Fast drying, Hardness | Fast air drying enamel, Steel pipe varnish |
| HR-2751 | 51-55 | Xylene / Mineral Spirit | Z-Z2 | 8↓ | 8↓ | Acryl, Urethane | Fast drying, Workability | Fast air drying enamel, Steel pipe varnish |
| HR-2121 | 74-76 | Xylene | Y-Z1 | 4-10 | 5↓ | Short | Wear resistance | Urethane curing, Steel structure and Machinery |
| HR-2172 | 64-66 | Butyl Acetate | V-Y | 6↓ | 4↓ | Short | Chemical resistance | Urethane curing, Military coating |
| HR-2223 | 59-61 | Mineral Spirit | V-Z | 12↓ | 4↓ | Silicone | Heat resistance, Weatherability | Heat resistant coating |
| HR-2254 | 59-61 | Xylene | Z1-Z3 | 10↓ | 12↓ | Acryl | Hiding power, Mechanical abrasion | Metalic coating |
| HR-2269 | 54-56 | Xylene / Mineral Spirit | ٥-۵ | 3↓ | 7↓ | Urethane | Adhesion, Mechanical properties | Air drying enamel |
| HR-2271 | 49-51 | Xylene | S-U | 5-12 | 10↓ | Phenol | Fast drying, Antirust | Air drying enamel |
| HR-2272 | 49-51 | Xylene / Mineral Spirit | U-W | 15↓ | 12↓ | Phenol | Fast drying, Antirust | Air drying enamel |

| Code | Non Volatile Content(%) | Solvent | Viscosity | Acid Value | Color | Characteristic | Application |
|---------|----------------------------|------------------------|-----------|---------------|-------|---|---|
| HR-1001 | 39-41 | Xylene | X-Z1 | - | 1↓ | Mechanical properties, Exterior durability, Weather resistance | Acrylic lacquer, Architecture coating |
| HR-1002 | 44-46 | Toluene / N-BuOH | U-X | 3.5-5.5 | 1↓ | Adhesion & Hardness, Chemical resistance, Fast drying | Lacquer finishes, Aluminum plate coating |
| HR-1004 | 49-51 | Toluene | Z1-Z3 | 5-9 | 1↓ | Adhesion, Gloss, Fast drying | Slate and floor steel structure |
| HR-1005 | 48-52 | Xylene | Z-Z2 | 10↓ | 2↓ | Fast drying, Weather resistance, Adhesion | Fire retardant coating |
| HR-1006 | 49-51 | Toluene | Y-Z1 | 6↓ | 1↓ | Workability, Durability, Chemical resistance | Slate and floor |
| HR-1007 | 39-41 | Toluene | Z2-Z4 | 10↓ | 1↓ | Mechanical properties, Exterior durability, Weather resistance | Architecture coating |
| HR-1502 | 50-52 | Xylene / N-BuOH | W-Y | 4-8 | 1↓ | Flexibility, Corrosion, Chemical resistance | Stoving enamel, Drum coating |
| HR-1503 | 49-51 | B.Acetate / Toluene | U-Y | 3↓ | 1↓ | Adhesion, Gloss, Fast drying | General purpose, Plastic coating |
| HR-1504 | 50-52 | B.Acetate / Toluene | W-Y | 4-8 | 1↓ | Adhesion, Gloss, Fast drying | General purpose, Plastic coating |

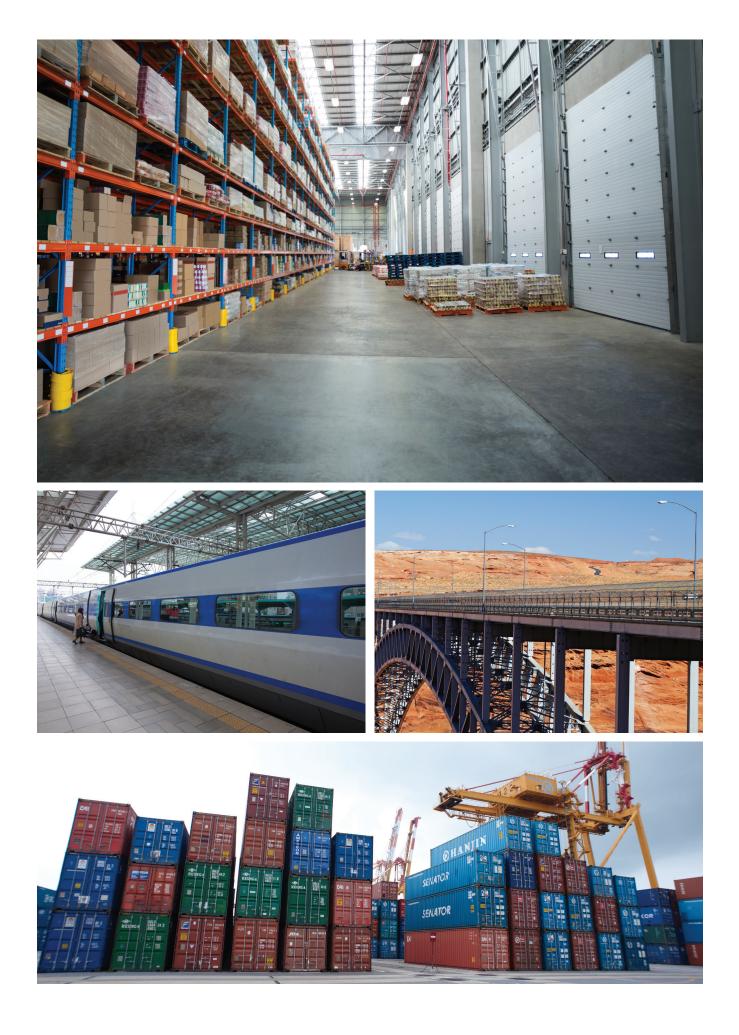
2. Acryl resin

3. Amino resin

| Code | Non Volatile Content(%) | Solvent | Viscosity | Acid Value | Color | Characteristic | Application |
|-----------------------|----------------------------|----------------------|-----------|---------------|-------|---------------------------------------|------------------------------|
| HR-5022 (MELAMINE) | 58-62 | Xylene / N-BuOH | G-K | - | 2↓ | Adhesion & Gloss, Chemical resistance | Stoving enamel, Drum coating |
| HR-5041 (UREA) | 58-62 | Xylene / N-BuOH | U-X | 7-11 | 2↓ | Adhesion & Gloss, Chemical resistance | Stoving enamel, PCM |
| HR-5042 (UREA) | 58-62 | Xylene / Iso-BuOH | U-Y | 5↓ | 2↓ | Adhesion & Gloss, Chemical resistance | Stoving enamel, PCM |

4. Water soluble resin

| Code | Non Volatile Content(%) | Solvent | Viscosity | Acid Value | Туре | Characteristic | Application |
|---------|----------------------------|---|-----------|---------------|-------------------------------|--|-----------------------------|
| HR-8101 | 39-43 | Butyl Cellosolve / Isopropyl Alcohol | W-Y | 20-25 | Acryl | Fast air drying, Corrosion resistance, Water resistance | Steel coating enamel |
| HR-8201 | 59-51 | Butyl Cellosolve / Isopropyl Alcohol | Z-Z2 | 28-34 | Acryl | Fast air drying, Corrosion resistance, Water resistance | Steel coating enamel |
| HR-8273 | 59-61 | Butyl Cellosolve | Z5-Z7 | 27-37 | Acryl modified alkyd | Adhesion, Fast air drying, Corrosion resistance | Steel coating enamel |
| HR-8277 | 49-51 | Butyl Cellosolve / Water | Z4-Z6 | 28-35 | Acryl modified epoxy ester | Adhesion, Water resistance, Workability | Large scale steel structure |



5. Waterborne epoxy resin

| Code | Non Volatile Content(%) | Viscosity(cps) | Specific gravity | EEW | Characteristic | Application |
|----------|----------------------------|----------------|---------------------|---------|--|------------------------------|
| HWE-2100 | 54-56 | 200-400 | 1.06-1.08 | 340-390 | Adhesion, Chemical resistance, Water resistance | Floor coating |
| HWE-3100 | 54-56 | 20-100 | 1.07-10.9 | 550-600 | Adhesion, Chemical resistance, Water resistance | Floor coating, Steel coating |

1. DESCRIPTION

HWE Series are waterborne epoxy dispersion resins with excellent dispersion stability. HWE Series are designed for a variety of coating applications such as floor coatings, industrial maintenance, etc. When HWE Series are cured with a waterborne curing agent, the coating film exhibits excellent performance in adhesion, mechanical properties, chemical resistance, water resistance and salt water resistance.

2. TYPICAL PROPERTIES

| No | ITEMS | HWE-2100 | HWE-3100 | | |
|----|-------------------------|-------------------------|----------------|--|--|
| 1 | Appearance (Liquid) | Milky white | Milky white | | |
| 2 | Appearance (Film) | Clear / Glossy | Clear / Glossy | | |
| 3 | Solid content (wt %) | Solid content (wt %) 55 | | | |
| 4 | Viscosity (cps, 25°C) | 300 | 50 | | |
| 5 | Specific Gravity (25℃) | 1.07 | 1.08 | | |
| 7 | Epoxy equivalent (g/eq) | 360 | 575 | | |

3. ADVANTAGES

- Low VOC emission
- Fast dry speed (Tack-free < 30mins)
- Excellent water resistance
- Long pot life (above 3hrs)
- High gloss
- Low viscosity
- High corrosion resistance
- Excellent adhesion and film hardness





Hanjin Chemical Co.,Ltd

Address: 110-24, Hwasan-ro, Onsan-eup, Ulju-gun, Ulsan, Korea (45009) TEL. +82-52-700-7100 | FAX. +82-52-700-7101 | www.hanjin-chemical.com