



OCTG & PIPELINE COATINGS



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PRODUCT CATALOGUE

# OCTG & PIPELINE COATINGS



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Shanghai Hilong Shine New Material Co.,Ltd

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### Product Description

- TC-2000 is epoxy-phenolic material, which can be used in a wide range of temperatures and PH conditions.
- Material has excellent corrosion resistance, effectively prevent pitting, can be used in various drilling mud systems.
- Material has excellent wear resistance.
- Material has excellent mechanical properties, even after repeated usage, the coating is still good. It can improve flow rate, reduce pumping pressure and wear.

### Typical Properties

Parameter	Typical Value
Color	Green
Abrasive Resistance	≥2 L/μm (Falling sand method), Taber abraser ≤35mg/(1000rpm.1000g),CS17
Adhesion	More than B
pH Range	4 – 13
Adhesion Strength	≥20MPa
Hardness	≥7H
High Temperature, High Pressure Test ( pH=12.5,148℃, 70Mpa )	≥48h, No bubbles, No adhesion loss
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23℃; Passed 90 Days, crude oil, oilfield water immersion at 80 ℃; Passed 90 Days, gasoline, diesel, kerosene immersion at 23℃; Passed
Operation Temperature	≤170℃ (338°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	150–250 μm
Recommended Use	Drill pipe coating for corrosion protection and hydraulic efficiency improvement
Recommended Environment	Natural and synthetic drill fluid
Restrictions	H <sub>2</sub> S or CO <sub>2</sub> acid environment, temperatures > 170℃ (338°F)

### Material Performance

Temperature	Pressure	Test Environment	Time
149℃/300°F	10000psi/70MPa	pH=12.5	48hrs
170℃/338°F	6500psi/45MPa	5% NaCl	72hrs
149℃/300°F	6500psi/45MPa	Hydrocarbon mixture	72hrs
66℃/150°F	Natural pressure	5% NaCl, drill fluid	2000hrs

### Package Size

20L steel barrel.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33℃.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet “MSDS TC-2000” and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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### Product Description

- TC-2000SS is epoxy-phenolic coating, for use in high temperature and pressure environment of natural gas wells with high content of H<sub>2</sub>S and CO<sub>2</sub>.
- Material has excellent corrosion resistance, effectively prevent pitting, can be used in various drilling mud systems.
- Material has very good wear resistance, even after repeated usage, the coating is still good.
- It can improve flow rate, reduce pumping pressure and wear.

### Typical Properties

Parameter	Typical Value
Color	Green
Abrasive Resistance	≥2 L/μm (Falling sand method), Taber abraser ≤25mg/(1000g.1000rpm,CS17)
pH Range	3 - 13
Adhesion	More than B
Hardness	≥7H
High Temperature, High Pressure Test ( pH=12.5,148°C, 70Mpa )	≥48h, No bubbles, No adhesion loss
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23°C; 90 Days, crude oil, oilfield water immersion at 80 °C; 90 Days, gasoline, diesel, kerosene immersion at 23°C; 720h, H <sub>2</sub> S (2.5MPa)+ CO <sub>2</sub> (2.0MPa)immersion 80°C;
Operation Temperature	≤204°C (400°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	150-250 μm
Recommended Use	Drill pipe coating for corrosion protection and hydraulic efficiency improvement
Recommended Environment	H <sub>2</sub> S, CO <sub>2</sub> containing environment
Restrictions	> 204°C (400°F)

### Material Performance

Temperature	Pressure	Test Environment	Time
149°C/300°F	70MPa/10000psi	PH=12.5	48h
177°C/350°F	45MPa/6500psi	5% NaCl	144h
204°C/400°F	70MPa/10000psi	Hot drill fluid	72h
149°C/300°F	45MPa/6500psi	Hydrocarbons mixture	72h
80°C/176°F	70MPa/10000psi	PH <sub>2</sub> S=2.5MPa, PCO <sub>2</sub> =2.0MPa, drill fluid	168h

### Package Size

20L steel barrel.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-2000SS" and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

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## Product Description

- TC2000P is an epoxy-novolac powder coating, which can be used in gas production environments containing H<sub>2</sub>S and CO<sub>2</sub> with higher temperature(400°F)and higher pressure conditions.
- It has good property of anti-corrosion and pit corrosion control, suitable for application in various drilling mud.
- It has excellent performance of Abrasion Resistance, the coating keeps good after repeated use.
- It can improve flow rate, reducing pumping pressure and abrasion.

## Typical Properties

Parameter	Typical Value
Color	Green
Abrasion Resistance	≥2 L/μm (Falling Sand Method) ≤120mg ( Taber Abraser1000g,5000cycles,CS17wheel)
pH	3~13
Adhesion	B and above
Flexibility	Grade 1
Hardness	≥6H
High Temperature & High Pressure Test ( PH=12.5,148°C, 70Mpa )	≥48h, no bubble, no adhesion change
Chemical Media Resistance	90 days, Soaked in normal temperature of10%HCl、10%H <sub>2</sub> SO <sub>4</sub> 、10%NaCl、10%NaOH 90 days, Soaked in 80°C Oil Field sewage and crude oil 90 days, Soaked in normal temperature of Gasoline, Diesel and Kerosene 168hrs,Soaked in 80°C H <sub>2</sub> S(2.5MPa)+CO <sub>2</sub> (2.0MPa)
Application Temperature	≤204°C ( 400°F )
Application Pressure	To the Yield Strength of pipe
Coating Thickness	175~375 μm(7~15mils)
Main Application Scopes	Drill Pipe coating for extremely abrasive environments
Main Service conditions	acid environment containing H <sub>2</sub> S & CO <sub>2</sub>
Applicated Conditions Restriction	> 204°C ( 400°F )

## Autoclave Test

Temperature	Pressure	Test Environment	Time
300°F/149°C	10000psi/70MPa	PH=12.5	48hrs
350°F/177°C	6500psi/45MPa	5% NaCl	24hrs
400°F/204°C	10000psi/70MPa	Hot drill fluid	72hrs
176°F/80°C	725psi/5MPa	P <sub>H<sub>2</sub>S</sub> =2.5MPa,P <sub>CO<sub>2</sub></sub> =2.0MPa,drill fluid	168hrs
200°F/93°C	2000psi/14MPa	Toluene:Kerosene=1:1(vol) 6%CO <sub>2</sub> /14%H <sub>2</sub> S/79%CH <sub>4</sub> 3%NaCl	48hrs

## Package Size

Net weight 30kg.

## Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

## Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3500" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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### Product Description

- TC-3000A is a modified epoxy coating, for different tubing and surface pipelines.
- Due to specific surface structure, coating has excellent anti-scaling and anti-corrosion properties.
- Material smooth surface provide reduce of wear and tear, improvement of flow efficiency more than 25%.

### Typical Properties

Parameter	Typical Value
Color	Green
Abrasive Resistance	≥2L/μm (Falling sand method), Taber abraser ≤45mg/(1000g.1000rpm,CS17)
pH Range	4 - 13
Adhesion	More than B
Hardness	≥4H
Flexibility	1 Class
Impact Resistance	≥5J
Acid Resistance (10%HCl+3%HF,50°C)	≥20h, No bubbles, No adhesion loss
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23°C; 90 Days, crude oil, oilfield water immersion at 80 °C; 90 Days, gasoline, diesel, kerosene immersion at 23°C;
Operation Temperature	≤150°C (302°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	100-200 μm
Recommended Use	Water injection, sewage wells, tubing, casing, gathering and transportation pipelines, pumps, well head equipment, etc.
Recommended Environment	Water, sewage, Sweet corrosive environment
Restrictions	> 150°C ( 302°F )

### Package Size

20L steel barrel.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3000A" and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Product Description

- TC-3000B is internal anti-paraffin coating that can be used for tubing, casing and gathering pipeline.
- Specific surface structure provide excellent corrosion protection and anti-paraffin performance.
- Coating can be used at high temperatures (≤180°C)
- Material smooth surface provide reduce of wear and tear, improvement of flow efficiency more than 25%.

### Typical Properties

Parameter	Typical Value
Color	Tan
Abrasive Resistance	≥2L/μm (Falling sand method), Taber abraser ≤45mg/(1000g.1000rpm,CS17)
pH Range	4 - 13
Adhesion	More than B
Hardness	≥4H
Flexibility	1 Class
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23°C; 90 Days, crude oil, oilfield water immersion at 80 °C; 90 Days, gasoline, diesel, kerosene immersion at 23°C;
Operation Temperature	≤150°C (302°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	100-200 μm
Recommended Environment	Crude oil, water, sewage, sweet corrosion (CO <sub>2</sub> ), moderate corrosive environment, CO <sub>2</sub> partial pressure ≤10MPa
Recommended Use	Oil wells, water injection wells, gathering pipelines, CO <sub>2</sub> injection wells, well head equipment, pumps etc.
Restrictions	>150°C

### Package Size

20L steel barrel.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3000B" and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Product Description

- TC-3000C is internal protective coating that can be used for tubing, casing and gathering pipeline.
- Material has good adhesion, abrasion resistance, anti-paraffin and anti-corrosion resistance.
- Material has excellent resistance to the H<sub>2</sub>S, CO<sub>2</sub> containing solutions.
- Material smooth surface provide reduce of wear and tear, improvement of flow efficiency more than 25%.

### Typical Properties

Parameter	Typical Value
Color	Green
Abrasive Resistance	≥2 L/μm (Falling sand method), Taber abraser ≤45mg/(1000g.1000rpm,CS17)
pH Range	2 – 13
Adhesion	More than B
Hardness	≥5H
Flexibility	1 Class
Impact Resistance	≥5J
Acid Resistance(10%HCl+3%HF,50°C)	≥20h, No bubbles, No adhesion loss
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23°C; Passed 90 Days, crude oil, oilfield water immersion at 80 °C; Passed 90 Days, gasoline, diesel, kerosene immersion at 23°C; Passed
Operation Temperature	≤180°C (356°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	150–250 μm
Recommended Use	OCTG, brine treatment system, crude oil pipe line, acid fracturing and gathering pipelines
Recommended Environment	Acid environment (contents H <sub>2</sub> S, CO <sub>2</sub> )

### Material Performance

Temperature	Pressure	Test Environment	Time
300°F/149°C	10000psi/70MPa	pH=12.5	48h
350°F/177°C	10000psi/70MPa	3% CO <sub>2</sub> /97% methane	48h
350°F/177°C	6500psi/45MPa	5% NaCl	72h
300°F/149°C	6500psi/45MPa	Hydrocarbon mixture	48h
200°F/93°C	2900psi/20MPa	12%HCl+3%HF acid mixture	24h
320°F/160°C	10000psi/70MPa	CO <sub>2</sub> partial pressure=2MPa, injection water	168h
300°F/149°C	5000psi/34.5MPa	H <sub>2</sub> S partial=1.0MPa, injection water	168h
320°F/160°C	6500psi/45MPa	CO <sub>2</sub> partial pressure=3MPa, injection water	168h

### Package Size

20L steel barrel.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet “MSDS TC-3000C” and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

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## Product Description

- TC-3000F is an epoxy-phenolic internal coating for injection tubing, casing and gathering pipeline.
- Material has excellent corrosion resistance, especially against acid wash solutions.
- Material can be used in severe environment of oil and water treatment systems etc.
- Material smooth surface provide reduce of wear and tear, improvement of flow efficiency more than 25%.

## Typical Properties

Parameter	Typical Value
Color	Green
Abrasive Resistance	≥2L/μm (Falling sand method)
pH Range	2 – 13
Adhesion	More than B
Hardness	≥5H
Flexibility	1 Class
Impact Resistance	≥5J
Acid Resistance(12%HCl+9%HF,25°C)	≥48h
Corrosion Resistance	90 Days, 10% HCl, 10% H <sub>2</sub> SO <sub>4</sub> , 10% NaCl, 10% NaOH immersion at 23°C; Passed 90 Days, crude oil, oilfield water immersion at 80 °C; Passed 90 Days, gasoline, diesel, kerosene immersion at 23°C; Passed
Operation Temperature	≤150°C (300°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	150–250 μm
Recommended Use	Natural gas wells, water injection wells, gathering and transportation pipeline system
Recommended Environment	High temperature and pressure, environment with frequent acid washing

## Material Performance

Temperature	Pressure	Test Environment	Time
300°F/149°C	10000psi/70MPa	pH=12.5	48h
300°F/149°C	10000psi/70MPa	3% CO <sub>2</sub> /97% methane	48h
350°F/177°C	6500psi/45MPa	5% NaCl	48h
300°F/149°C	6500psi/45MPa	Hydrocarbon mixture	48h
200°F/93°C	2900psi/20MPa	12%HCl+3%HF+ inhibitor	24h
300°F/149°C	2900psi/20MPa	CO <sub>2</sub> partial pressure=3MPa, injection water	360h

## Package Size

20L steel barrel.

## Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

## Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet “MSDS TC-3000F” and follow all local or national safety regulations.

Use in well ventilated areas. Avoid inhalation, avoid contact with skin and eyes, and do not swallow. Spillage on the skin should immediately be removed with suitable cleaner, soap and water. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

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## Product Description

TC-3000I is a special epoxy coating, it has working temperature up to 120°C(248° F).

- Ambient cure and moderate temperature curing
- Excellent flexibility and adhesion
- Excellent corrosion resistance

## Recommended Use

TC-3000I is a protective coating internal and external surface of tubing, casing and gathering pipeline.

## Product Information

Colour	Gray, Green
Volume Solids	≥70%
Mix Ratio	Part A(Base) to Part B(Curing Agent)=100: 2.5 ( by mass )

## Drying Information

Temperature	10°C (50°F)	25°C (77°F)	40°C (104°F)
Touch Dry	16h	1h	0.5h
Hard Dry	168h	72h	4h
Cure	15d	7 d	3d

## Surface Preparations

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504:2000. Minimum Sa2.5 (ISO 8501-1:2007) after blasting, or SSPC SP6 abrasive jet processing standard, or SSPC SP11 power tool cleaning standards;

Roughness: Anchor profile: 50-85 μ m, Ry5, (ISO 8503-2).

Other: Please consult Hilonggroup.

## Application

Application Condition	Substrate temperature should not be lower than 10°C ( 50°F ) and at least 3 °C ( 37.4°F ) above the dew point. Enclosed spaces should have adequate ventilation to ensure proper drying. If using forced ventilation, do not aim hot air flow to the coated surface to avoid surface crust and solvent hold-up. Avoid contact of oil, chemicals and physical action with uncured coating.
Mixing ratio	100 mass parts of component A (Base) and 2.5 mass part of component B (Curing agent), stir intensively until homogenized.
Thinner	Special thinner, do not exceed the local environmental protection regulations.
High-speed rotating spray	Recommended Nozzle tip 0.078in-0.157in Pressure at nozzle 0.2MPa ( 29 p.s.i ) Filter Min. 60 mesh recommended. Check to ensure that filters are clean.
Brush	Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness.
Note	1.It is of vital importance that the nozzle and other parts of the spraying equipment are cleaned properly directly after the work is done due to the short pot life. 2.The hoses should be of good quality and not longer than necessary. 3.The temperature of base and curing agent is recommended to be below 23°C ( 73.4°F ) when the paint is mixed due to the short pot life.

## Unit Size

24Kg part A (Base) in a 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition.  
Shelf life is 12 months from time of production.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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### Product Description

- TC-3000FP is a thick modified epoxy-phenolic powder coating.
- Material has excellent adhesion, abrasion and chemical resistance.
- Can be used as corrosion protection in the water, oil, medium acid and alkaline, high mineralized, containing CO<sub>2</sub> and H<sub>2</sub>S, corrosive environment.
- Material surface is smooth with high gloss, improves flow efficiency.

### Typical Properties

Parameter	Typical Value
Color	Green
Operation Temperature	≤204°C (400°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	175~375 μ m (7~15mils)
Recommended Use	Production tubing, downhole equipment, ground equipment and line pipe
Recommended Environment	High temperature, high pressure sweet / sour oil and gas wells, water injection wells, CO <sub>2</sub> tertiary oil recovery systems
Restrictions	PH <sub>2</sub> S ≥ 10MPa, Operation temperature > 204°C (400°F)

### Material Performance

Temperature	Pressure	Test Environment	Time
300°F/149°C	10000psi/70MPa	pH=12.5NaOH	48h
300°F/149°C	5000psi/35MPa	10%CO <sub>2</sub> /90%CH <sub>4</sub>	48h
300°F/149°C	6500psi/45MPa	27%CO <sub>2</sub> /73%CH <sub>4</sub> , 5% NaCl water solution	72h
150°F/65°C	2000psi/14MPa	3%CO <sub>2</sub> /97%CH <sub>4</sub> 5% NaCl solution H <sub>2</sub> S saturated	28days

### Package Size

Net weight 30kg.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3000FP" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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### Product Description

- TC-3500 is thick epoxy powder coating.
- Material has excellent adhesion and flexibility.
- Can be used as corrosion protection in the water, oil, medium acid and alkaline, high mineralized, containing CO<sub>2</sub>, corrosive environment.
- Material surface is smooth with high gloss, improves flow efficiency.

### Typical Properties

Parameter	Typical Value
Color	Brown
Operation Temperature	≤ 121°C (250°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	200–375 μ m ( 7–15mils )
Recommended Use	Production tubing, downhole equipment, ground equipment and line pipe
Recommended Environment	High temperature, high pressure sweet / sour oil and gas wells, water injection wells, CO <sub>2</sub> tertiary oil recovery systems
Restrictions	Operation temperature >121°C (250°F)

### Material Performance

Temperature	Pressure	Test Environment	Time
250°F/121°C	5000psi/35MPa	10%CO <sub>2</sub> /90%CH <sub>4</sub>	48h
250°F/121°C	6500psi/45MPa	27%CO <sub>2</sub> /73%CH <sub>4</sub> 5% NaCl solution	48h

### Package Size

Net weight 30kg.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3500" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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### Product Description

- TC-3600 is a high build coating made from epoxy powder.
- It has good property of adhesion and flexibility.
- It can be applied in middling sour and alkali conditions, such as oil and water containing CO<sub>2</sub>, H<sub>2</sub>S or salts.
- It can improve flow rate, reducing pumping pressure and abrasion.

### Technical Index

Type	Epoxy powder
Color	Green
Abrasion Resistance	≥2 L/μm ( Falling Sand Method )
pH	3~13
Adhesion	B and above
Hardness	≥4H
Autoclave Test ( pH=12.5, 100°C, 35MPa )	≥48hrs, no bubble, no adhesion change
Chemical Resistance	90 days, Soaked in normal temperature of 10%HCl, 10%H <sub>2</sub> SO <sub>4</sub> , 10%NaCl, 10%NaOH 90 days, Soaked in 80°C Oil Field sewage and crude oil 90 days, Soaked in normal temperature of Gasoline, Diesel and Kerosene
Application Temperature	≤100°C ( 212°F )
Application Pressure	To the Yield Strength of pipe
Coating Thickness	200~375 μm ( 7~15mils )
Main Application Scopes	Tubing, Vessel and equipment in and out of oil well, Line pipe
Primary Service	Sweet or sour oil well with high-temperature and high-pressure, Injection Well, CO <sub>2</sub> Injection Well, acid environment containing H <sub>2</sub> S.
Applicated Conditions Restriction	> 100°C ( 212°F )

### Autoclave Test

Temperature	Pressure	Test Conditions	Time
212°F/100°C	5000psi/35MPa	10%CO <sub>2</sub> /90%CH <sub>4</sub> 碳氢化合物	48hrs
203°F/95°C	2900psi/20MPa	6%H <sub>2</sub> S/10%CO <sub>2</sub> /84%CH <sub>4</sub> 5%Salt	48hrs

### Package Size

Net weight 30kg.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3500" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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## Product Description

- TC-3520A is a thick epoxy powder internal protective coating for tubing.
- TC-3520A have excellent wear resistance, adhesion and flexibility, which be strong recommend to used in suck rod wear system to protect tubing The coating abrasion loss is less than 100  $\mu$  m after  $6 \times 10^5$  times of suck rod alternate motion.
- TC-3520A also can be used as corrosion protection coating in the water, oil, medium acid and alkaline, high mineralized, containing CO<sub>2</sub>, corrosive environment.
- TC-3520A Material surface is smooth with high gloss, improves flow efficiency.

## Typical Properties

Parameter	Typical Value
Color	Black
Operation Temperature	$\leq 120^\circ\text{C}$ (250°F)
Operation Pressure	Limited by pipe yield strength
Coating Thickness	250–500 $\mu$ m ( 10–25mils )
Recommended Use	Production tubing, downhole equipment, ground equipment and line pipe
Recommended Environment	Medium temperature sweet / sour oil and gas wells, water injection wells, CO <sub>2</sub> tertiary oil recovery systems
Restrictions	Operation temperature $> 120^\circ\text{C}$ (250°F), sour service environment

## Package Size

Net weight 30kg.

## Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

## Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3520A" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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### Product Description

- TC-3520S is a high build coating made from epoxy powder with excellent wearable resistance.
- It has good property of abrasion resistance, adhesion and flexibility.
- It can be applied in middling sour and alkali conditions, such as oil and water containing H<sub>2</sub>S&CO<sub>2</sub> or salts.
- It can improve flow rate, reducing pumping pressure and abrasion.

### Technical Index

Type	Epoxy powder
Color	Black
Application Temperature	≤250°F ( 120°C )
Application Pressure	To the Yield Strength of pipe
Coating Thickness	10~25mils ( 250~500 μ m )
Primary Application	Tubing, Vessel and equipment in and out of oil well, Line pipe
Primary Service	Sweet or sour oil well with middling temperature, Injection Well, CO <sub>2</sub> Injection Well, acid environment containing H <sub>2</sub> S.
Applicated Conditions Restriction	>250°F ( 120°C )

### Autoclave Test

Temperature	Pressure	Test Conditions	Time
250°F/120°C	10000psi/70MPa	pH=12.5NaOH	24hrs
300°F/149°C	5000psi/35MPa	10%CO <sub>2</sub> /90%CH <sub>4</sub> Hydrocarbon	16hrs
300°F/149°C	6500psi/45MPa	27%CO <sub>2</sub> /73%CH <sub>4</sub> Hydrocarbon5%Salt	16hrs
176°F/80°C	1450psi/10MPa	5%H <sub>2</sub> S/10%CO <sub>2</sub> /85%CH <sub>4</sub> 5%Salt	48hrs

### Package Size

Net weight 30kg.

### Transportation and Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C. Relative humidity should not exceed 65%.

### Safety and Handling

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS TC-3520S" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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### Product Description

- Hiflon-100 is thread coating ,used for all kinds of tubing and casing
- Outstanding adhesive force
- High load-carrying ability
- Good wearing resistance
- Excellent anti-galling property

### Technical Parameter Table

Type	Polymer(liquid)
Colour	Black
PH value	5~10
Adhesive	5A
Chemical resistance	Soaked in 10% HCl,10% H <sub>2</sub> SO <sub>4</sub> ,10% NaCl,10% NaOH respectively for 90 days at room temperature Soaked in Oilfield sewage,Crude oil for 90 days at 80°C Soaked in Gasoline, diesel, kerosene for 90 days at room temperature
Using temperature	≤ 121°C ( 250°F )
Using pressure	Until the pipe body yield
Coating thickness	10~25 μ m
Main application range	Injection well tubing, casing thread , etc
Limit service environment	≥ 121°C ( 250°F ) , Containing H <sub>2</sub> S corrosion environment

### Autoclave Test Under Different Conditions

Temperature	Pressure	Medium	Time
250°F/121°C	5760psi/40Mpa	PH=12.5(NaOH solution)	48hrs
250°F/121°C	5760psi/40Mpa	PH=5~6(Water)	168hrs

### Packing Specification

The product is packaged by 20L drum packaging.

### Delivery and Storage

Keep container sealed strictly, during delivery and storage.Keep away from sun and rain,handle gently.warehouse should be well-ventilated, cool ,dry, and away from fire ,heat and living place. Do not store above 33°C(91°F).  
Shelf life:The product shelf life of 12 months under 25°C(77°F) temperatrue,more than shelf life,if it is pass through the examination of the performance index still be used.

### Safety and Handling

Before using the product,please pay attention to the material safety date sheet(MSDS) about the health and safety.The constrction and use should abide by national standards and regulations on health, safety and environmental protection.

### Note

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### Product Description

- Hiflon 200 W is a hydrogen sulfide corrosion resistant thread coating ,used for all kinds of tubing and casing
- Outstanding adhesive force
- High load-carrying ability
- Good wearing resistance
- Excellent anti-galling property

### Technical Parameter Table

Type	Polymer(liquid)
Colour	Black
PH value	5~10
Adhesive	5A
Chemical resistance	Soaked in 10% HCl,10% H <sub>2</sub> SO <sub>4</sub> ,10% NaCl,10% NaOH respectively for 90 days at room temperature Soaked in Oilfield sewage,Crude oil for 90 days at 80°C Soaked in Gasoline, diesel, kerosene for 90 days at room temperature
Using temperature	≤204°C ( 400°F )
Using pressure	Until the pipe body yield
Coating thickness	10~25 μ m
Main application range	Containing H <sub>2</sub> S corrosion environment of tubing, casing thread parts, etc
Limit service environment	≥201°C ( 400°F )

### Autoclave Test Under Different Conditions

Temperature	Pressure	Medium	Time
400°F/204°C	5760psi/40Mpa	PH=12.5(NaOH solution)	48hrs
250°F/121°C	5760psi/40Mpa	PH=5~6(Water)	168hrs
302°F/150°C	2900 psi/20Mpa	16%/ H <sub>2</sub> S 10%/CO <sub>2</sub> 74%/CH <sub>4</sub> 5% salt solution	48 hrs

### Packing Specification

The product is packaged by 20L drum packaging.

### Delivery and Storage

Keep container sealed strictly, during delivery and storage.Keep away from sun and rain,handle gently.warehouse should be well-ventilated, cool ,dry, and away from fire ,heat and living place. Do not store above 33°C(91°F).  
Shelf life:The product shelf life of 12 months under 25°C(77°F) temperatrue,more than shelf life,if it is pass through the examination of the performance index still be used.

### Safety and Handling

Before using the product,please pay attention to the material safety date sheet(MSDS) about the health and safety.The constrction and use should abide by national standards and regulations on health, safety and environmental protection.

### Note

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**Product Description:**

- Hiflon 300 is thread coating ,used for all kinds of tubing and casing
- Outstanding adhesive force
- High load-carrying ability
- Good wearing resistance
- Excellent anti-galling property

**Technical Parameter Table:**

Type	Polymer(liquid)
Colour	Silver white
PH value	5~10
Adhesive	5A
Chemical resistance	Soaked in 10% HCl,10% H <sub>2</sub> SO <sub>4</sub> ,10% NaCl,10% NaOH respectively for 90 days at room temperature Soaked in Oilfield sewage,Crude oil for 90 days at 80°C Soaked in Gasoline, diesel, kerosene for 90 days at room temperature
Using temperature	≤250°C ( 482°F )
Using pressure	Until the pipe body yield
Coating thickness	10~25 μ m
Main application range	Injection well tubing, casing thread , etc
Limit service environment	≥250°C ( 482°F ) Containing H <sub>2</sub> S corrosion environment

**Autoclave Test Under Different Conditions**

Temperature	Pressure	Medium	Time
300°F/149°C	10000psi/70Mpa	PH=12.5(NaOH solution)	48hrs
250°F/121°C	5760psi/40Mpa	PH=5~6(Water)	168hrs

**Packing Specification**

The product is packaged by 20L drum packaging.

**Delivery and Storage**

Keep container sealed strictly, during delivery and storage.Keep away from sun and rain,handle gently.warehouse should be well-ventilated, cool ,dry, and away from fire ,heat and living place. Do not store above 33°C(91°F).  
 Shelf life:The product shelf life of 12 months under 25°C(77°F) temperatrue,more than shelf life,if it is pass through the examination of the performance index still be used.

**Safety and Handling**

Before using the product,please pay attention to the material safety date sheet(MSDS) about the health and safety.The constrction and use should abide by national standards and regulations on health, safety and environmental protection.

**Note**

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## Product Description

EC-500 is a protective coating material for OCTG. It also can be used for protection of steel structure, which has excellent anti-rust performance and aging resistance. Coating film looks smooth, bright and has good decorative function. EC-500 has a good anti sagging property and short dry time. EC-500 does not contain benzene, halohydrocarbon and heavy metal elements, safe, easy to apply and also economic. EC-500 can be coated by brush, dipping and spraying. Protection period of EC-500 is up to 12 months.

## Recommended Uses

Material is used as a protective coating for oil pipelines, as well as steel stripe, steel structures.

## Product Information

Color	Transparent yellow, transparent black and black
Solid content	30%–38%
Viscosity, cup-4	≥ 15s
Density, g/cm <sup>3</sup>	0.9–1.05
Flash point	30°C ( 86°F )

## Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	25	35	30
Wet Film Thickness, μm	75	120	100
Theoretical Spreading Rate, m <sup>2</sup> /L	12.5	8.5	10.0

## Drying Information

	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )
Substrate Temperature			
Touch Dry	10 min	8 min	5 min
Through Dry	30 h	24 h	20 h

## Surface Treatment

All surfaces should be clean, dry and free from contamination. The surface should be assessed and treated in accordance with Sa1.0 or St2.

## Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3°C ( 37°F ) above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	EC-500 thinner
Application Method	Spray: Use airless spray or conventional spray Brush: Recommended for previously coated and small areas, care must be taken to achieve the specified dry film thickness. Curtain Coating: Care must be taken to achieve the specified dry film thickness.
Note	Dry Film Thickness: For the best protective effect dry film thickness should be 25 microns greater than corrosion layer, dust or other impurities. Filter: Check to ensure that filters are clean. Viscosity control: During application the material gradually increases viscosity, so diluents should be added in time.

## Unit Size

200 liter unit: 170Kg coating in 200 liters container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33°C (91°F).

Shelf life is 12 months from time of production under 25°C ( 77°F ) .

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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### Product Description

EC-502 is an advanced coating material for external protection of rusted OCTG. It also can be used for protection of steel structures, which has excellent mechanical property and corrosion resistance. Coating film looks smooth and glossy, which has a good decorative function. It has ability to transform surface corrosion layer (less than 30 μm), therefore requirements to the surface treatment are very low. In this way, construction efficiency is improved. Material also has a good anti sagging property and short drying time. It can be coated by brush, dipping and spraying. Protection period is 18 to 24 months.

### Recommended Uses

EC-502 can be used for surfaces with low grade preparation, maritime transport, a long time external protection of external surface of oil pipelines, steel stripe and steel structures.

### Product Information

Color	Transparent yellow, transparent black and black
Solid content	35%–45%
Viscosity, cup-4	≥25s
Density, g/cm <sup>3</sup>	0.9–1.05
Flash point	30°C ( 86°F )

### Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	32	50	40
Wet Film Thickness, μm	80	125	100
Theoretical Spreading Rate, m <sup>2</sup> /L	12.5	8.0	10.0

### Drying Information

Substrate Temperature	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )
Touch Dry	10 min	8 min	5 min
Through Dry	30 h	24 h	20 h

### Surface Treatment

It can be directly coated on the rusted surface. To achieve the best protective effect, you'd better remove oil, water, dust and other impurities away from the surface.

### Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3°C ( 37°F ) above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	EC-502 thinner
Application Method	Spray: Use airless spray or conventional spray Brush: Recommended for previously coated and small areas, care must be taken to achieve the specified dry film thickness. Curtain Coating: Care must be taken to achieve the specified dry film thickness.
Note	Dry Film Thickness: For the best protective effect dry film thickness should be 30 microns greater than corrosion layer, dust or other impurities. Filter: Check to ensure that filters are clean. Viscosity control: During application the material gradually increases viscosity, so diluents should be added in time.

### Unit Size

170Kg coating in 200 liters container.

### Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33°C (91°F).  
Shelf life is 12 months from time of production under 25°C ( 77°F ) .

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

### Note

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## Product Description

EC-504 is a colored effective OCTG external protective coating. It also can be used for protection of steel structures. Material has excellent anti-rust and anti-aging properties; film looks smooth and bright, with good decorative function. Material has a good anti sagging properties and short drying time. Solvents used in the material are environmentally friendly. Without benzene, halohydrocarbon and heavy metal, material is economic, safe and easy to use. It can be coated by brush, dipping and spraying. Protection period is up to 12 months.

## Recommended Uses

EC-504 is used as a protective coating for oil pipelines, steel stripe and steel structures.

## Product Information

Color	Different color
Solid content	35%–40%
Viscosity, cup-4	≥25s
Density, g/cm <sup>3</sup>	0.95–1.20
Flash point	30°C ( 86°F )

## Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	30	45	35
Wet Film Thickness, μm	86	150	120
Theoretical Spreading Rate, m <sup>2</sup> /L	11.7	6.7	8.5

## Drying Information

	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )
Substrate Temperature			
Touch Dry	10 min	8 min	5 min
Through Dry	30 h	24 h	20 h

## Surface Treatment

It can be directly coated on the rusted surface. To achieve the best protective effect, you' d better remove oil, water, dust and other impurities away from the surface.

## Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3°C ( 37°F ) above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	EC-504 thinner
Application Method	Spray: Use airless spray or conventional spray Brush: Recommended for previously coated and small areas, care must be taken to achieve the specified dry film thickness. Curtain Coating: Care must be taken to achieve the specified dry film thickness.
Note	Dry Film Thickness: For the best protective effect dry film thickness should be 30 microns greater than corrosion layer, dust or other impurities. Filter: Check to ensure that filters are clean. Viscosity control: During application the material gradually increases viscosity, so diluents should be added in time.

## Unit Size

170Kg coating in 200 liters container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33 °C (91°F).

Shelf life is 12 months from time of production under 25°C ( 77°F ) .

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

EC-601 is a water soluble external protective coating for pipes. Material does not contain organic solvents and heavy metals. Therefore, it is environmentally friendly, safe and easy to use. Material is not expensive, can be coated by brush, dipping and spraying. It has excellent resistance to heating, weathering, and corrosion resistance.

## Recommended Uses

EC-601 is used as a protective coating for oil pipelines, steel stripe and steel structures.

## Product Information

Color	Transparent, black
Solid content	35%–45%
Density, g/cm <sup>3</sup>	0.95–1.10

## Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	30	40	35
Wet Film Thickness, μm	85	114	100
Theoretical Spreading Rate, m <sup>2</sup> /L	11.8	8.8	10.0

## Drying Information

Substrate Temperature	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )
Touch Dry	35min	20min	10min
Through Dry	24h	12h	6h

## Surface Treatment

All surfaces should be clean, dry and free from contamination. The surface should be assessed and treated in accordance with Sa1.0 or St2.

## Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) . Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	De-ionized water or purified water
Application Method	Spray: Use airless spray or conventional spray Brush: Recommended for previously coated and small areas, care must be taken to achieve the specified dry film thickness. Curtain Coating: Care must be taken to achieve the specified dry film thickness.
Note	Dry Film Thickness: For the best protective effect dry film thickness should be 30 microns greater than corrosion layer, dust or other impurities. Filter: Check to ensure that filters are clean. Viscosity control: During application the material gradually increases viscosity, so water should be added in time.

## Unit Size

200Kg coating in 200 liters container or 50Kg coating in 50 liters container.

## Storage

Store in dry, shaded conditions.

Shelf life is 12 months from time of production under 25°C ( 77°F ) .

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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### Product Description

EC-718 is a special internal protective coating for OCTG, which has good wetting properties. Provides 100% protection of steel surface, keeps the protective properties after scratching, wearing and other types of coating partial failure. Material has excellent anti-rust and storage stability. Material does not contain heavy metal, safe and easy to use.

- Good moist heat resistance
- excellent rust resistance ( casing inner surface )

### Recommended Uses

Material is mainly applicable to the inner wall of the casing, and can also be used for the protection of all kinds of metal substrate storage, suitable for 60°C environment.

### Product Information

Colour	transparent yellow
Volume Solids	25% ± 2%
Viscosity (#4 cup, 25°C(77°F),s	10-20

### Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness( μ m)	30	40	35
Wet Film Thickness( μ m)	85	114	100
Theoretical Spreading Rate(m <sup>2</sup> /L)	10	6.7	8

### Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504:2000. Minimum Sa2.5 (ISO 8501-1:2007) after blasting, or SSPC SP6 abrasive jet processing standard, or SSPC SP11 power tool cleaning standards;

Roughness: Anchor profile: 50-85 μ m, Ry5, (ISO 8503-2).

Other: Please consult your Hilong representative.

### Application

Application Condition	Minimum temperature of a coated surface should be 5°C ( 41°F ). Temperature and relative humidity should be measured in a working place near the substrate. Application site should have adequate ventilation to ensure proper drying. Avoid contact of oil and chemicals with uncured coating.
Application Method	EC-718 is a single component liquid, it can be applied by spraying, showering, dipping, brushing and other types of application technology. Application technology depends on personnel qualification, types of surfaces and surface size. Using rotating spraying nozzles is one of the most economical methods for application of inner coating.

### Unit Size

170Kg in an 200 litres container.

### Storage

Store in dry, shaded conditions away from sources of heat and ignition.  
Shelf life is 12 months from time of production.

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

### Note

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## Product Description

SN-101 is black, modified high density polyethylene pellets, which have very good extrusion properties. Advanced manufacturing technology and reasonable content of carbon particles ensure it has good weather resistance. It also has excellent mechanical properties, heat distortion properties and excellent resistance to environmental stress cracking (ESCR).

SN-101 can be used as 2LPE/3LPE protective top coat for line pipe coating, working at low and high temperatures (-70~85 °C).

## Technical Regulation

SN-101 conforms to:GB/T 23257-2009, DIN 30670 and CAN/CSA Z245.21.

## Typical Properties

Physical Properties		Typical Value	Test Method
Density		0.950 g/cm <sup>3</sup>	ISO 1183
Melt Flow (190 °C/2.16 kg)		0.30 g/10 min	ISO 1133
Carbon Content		2.3%	ISO 6964
ECSR (F50, 10% Igepal)		≥1500h	ASTM D1693-A
UV Resistance (336 h) <sup>1</sup>		≥95%	ISO21809附录G
Heat Aging Resistance (100 °C, 4800 h) <sup>2</sup>		9.5%	GB/T 3682
Moisture Content		0.05%	ISO 15512-2008
Oxidation Induction Time (220 °C)		35min	ISO 11357-6-2008
Chemical Resistance (Immersing, 7d)	10%HCl,	≥90%	GB/T 23257-2009 Appendix H
	10%NaCl,	≥90%	
	10%NaOH	≥90%	
Mechanical Properties		Typical Value	Test Method
Indentation	23 °C	0.05 mm	GB/T 23257-2009 Appendix G
	70 °C	0.09 mm	
Hardness		59	ISO 868
Hardness, Shore D		25 MPa	ISO 527
Tensile Strength		11%	ASTM G17-07
Penetration *		≥650%	ISO 527
Elongation at Break			
Electrical Properties		Typical Value	Test Method
Electric Strength		≥30 kv/mm	GB/T 1408.1
Volume Resistivity		5.0 × 10 <sup>15</sup> Ω · m	GB/T 1410
Thermal Characteristics		Typical Value	Test Method
Melting Point		≥128 °C(≥262 °F)	GB/T 19466.3-2004
Vicat Softening Point		≥114 °C(≥237 °F)	ISO 306
Brittleness Temperature		≤-65 °C(≤-85 °F)	ASTM D746

<sup>1</sup> Difference of tensile strength and elongation at break between test results before and after aging.

<sup>2</sup> Difference of melt flow index between test results before and after aging.

## Instruction Parameters

Unit	Pre-heat Temperature	Extrusion Nozzle Temperature	Melt Temperature	Head Temperature
Metric Units	190-210°C	200-240°C	220-240°C	200-240°C
Imperial units	374-410°F	392-464°F	428-464°F	392-464°F

## Unit Size

Net weight 25kg or 800kg.

## Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

Period of Validity: The product can be stored 12 months after the date of production in the dry environment(25°C/77°F).

If out this period, the product should be tested again to make sure the property can be follow the standard request.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

SN-101A is a top coat material for foam insulated pipe with excellent mechanical properties, heat distortion properties and excellent resistance to environmental stress cracking (ESCR), can be used in one-step or two-step machined forming process. SN-101A is translucent yellow or black.

## Technical Regulation

SN-101A conforms to many specification of insulation pipeline projects, such as ZEMD-A-E-PL-SP-G-05 Russia-China Crude oil pipeline project specification.

## Typical Properties

Physical Properties		Typical Value	Test Method
Density		0.945 g/cm <sup>3</sup>	GB/T 4472
Carbon Content		2.3%	GB/T 13021
Carbon Density		1.735 g/cm <sup>3</sup>	CJ/T 114-2000
Extractable Toluene in Carbon		0.06%	CJ/T 114-2000
Carbon Particle Size		0.016 μm	CJ/T 114-2000
Melt Flow (190 °C/2.16 kg)		0.22 g/10 min	GB/T 3682
ECSR(F50,10% Igepal)		≥1500 h	GB/T 1842
UV Resistance	≥90%	≥90%	GB/T 23257-2009 Appendix I
(336 h) <sup>3</sup>	≥90%	≥90%	
Heat Aging(100 °C, 2400 h) <sup>4</sup>		12%	GB/T 3682
Chemical Resistance	10%HCl	≥96%	GB/T 23257-2009 Appendix H
	10%NaCl	≥97%	
(Immersing 7d)	10%NaOH	≥97%	

Mechanical Properties		Typical Value	Test Method
Tensile Strength	Axial	22 MPa	GB/T 1040
	Circumferential	23 MPa	GB/T 1040
	Deviation	4.5%	GB/T 1040
Elongation at Break		≥600%	GB/T 1040
Longitude Relaxation Shrinkage		2%	GB/T 6671.2
Long Time Mechanical Test4 MPa 80 °C		2400 h	CJ/T 114-2000
Indentation	23 °C	0.05 mm	GB/T 23257-2009 Appendix G
Hardness	70 °C	0.09 mm	

Electrical Properties		Typical Value	Test Method
Electric Strength		≥30 kv/mm	GB/T 1408.1
Volume Resistivity		5.0 × 10 <sup>15</sup> Ω · m	GB/T 1410

Thermal Characteristics		Typical Value	Test Method
Vicat Softening Temperature		≥116 °C(≥241°F)	GB/T 1633
Brittleness Temperature		≤-65 °C(≤-85°F)	GB/T 5470

<sup>3</sup>Difference of tensile strength and elongation at break between test results before and after aging.

<sup>4</sup>Difference of melt flow index between test results before and after aging.

## Unit Size

Net weight 25kg or 800kg.

## Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

Period of Validity: The product can be stored 12 months after the date of production in the dry environment(25°C/77°F). If out this period, the product should be tested again to make sure the property can be follow the standard request.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

SN-102 is a maleic anhydride modified polyethylene, with excellent adhesion to the FBE, recommended as adhesive layer for SN-101 material or other polyethylene with the same parameters.

SN-102 is mainly used as adhesive layer between FBE and polyethylene top coat in 3LPE systems, and can also be used in 2LPE coating systems.

## Technical Regulation

SN-102 conforms to DIN 30670 and CAN/CSA Z245.21.

## Typical Properties

Physical Properties	Typical Value	Test Method
Density	0.930 g/cm <sup>3</sup> (0.0336lb/in <sup>3</sup> )	ASTM D792
Melt Flow	2.40g/10min(190°C/2.16kg)	ASTM D 1238
	0.00529lb/10min(374°F/4.76lb)	
Moisture Content	0.06 %	HG/T 2751
Oxidation Induction Time(200°C)	15 min	ASTM D 3895
Mechanical Properties	Typical Value	Test Method
Tensile Strength	20 MPa(2900 psi)	ASTM D 638
Elongation at Break	≥ 650 %	ASTM D 638
Flexural Modulus	530 MPa(77 ksi)	ASTM D 790-2000
Hardness, Shore D	47	ASTM D 2240
Bonding Strength	≥ 10 kN/m(≥ 57 pli)	50 °C, 3LPE; DIN 30670
	≥ 20 kN/m(≥ 114 pli)	23 °C, 3LPE; DIN 30670
Thermal Characteristic	Typical Value	Test Method
Vicat Softening Temperature	≥ 100 °C(≥ 212 °F)	ASTM D1525
Melting Point	122 °C(252 °F)	ASTM D3418
Brittleness Temperature	≤ -65 °C(≤ -85 °F)	ASTM D746

<sup>1</sup> Difference of tensile strength and elongation at break between test results before and after aging.

<sup>2</sup> Difference of melt flow index between test results before and after aging.

## Processing Parameters

Unit	Pre-heat Temperature	Extrusion Nozzle Temperature	Melt Temperature	Head Temperature
Metric Units	180-210°C	190-240°C	210-230°C	190-240°C
Imperial units	356-410°F	374-464°F	410-446°F	374-464°F

## Unit Size

Net weight 25kg or 700kg.

## Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

Period of Validity: The product can be stored 6 months after the date of production in the dry environment(25°C/77°F).

If out this period, the product should be tested again to make sure the property can be follow the standard request.

## Health And Safety

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS SN-102" and follow all local or national safety regulations.

Use in well ventilated areas. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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### Product Description

SN-103 is a white color high performance polypropylene copolymer for injection molding and thermoforming applications. It has low melt flow, can be used in 2LPP/3LPP systems for corrosion protection of buried pipelines, material has excellent heat and impact resistance, excellent UV and thermal aging properties and good resistance to stress cracking.

### Technical Regulation

SN-103 conforms to NFA 49-711, DIN 30678 and Shell (DEP 31.40.30.31) technical specifications.

### Typical Properties

Physical Properties	Typical Value	Test Method
Density	0.900 g/cm <sup>3</sup>	ISO 1183/ISO 1872-2B
Melt Flow	0.90 g/10 min 230 °C/2.16 kg	ASTM D 1238
Mechanical Properties	Typical Value	Test Method
Tensile Strength	26 MPa	ASTM D 638
Elongation at Break	≥400%	ASTM D 638
Impact Strength	2.5 J/cm <sup>2</sup>	ISO 179
Flexural Modulus	1200 N/mm <sup>2</sup>	ASTM D 790-2000
Hardness, Shore D	62	ASTM D 2240
Thermal Characteristic	Typical Value	Test Method
Vicat Softening Temperature	142°C ( 288°F )	ASTM D1525
Melting Point	162°C ( 324°F )	ASTM D3418
Brittleness Temperature	≤-50°C(≤-58°F)	ASTM D746

### Processing Parameters

Unit	Pre-heat Temperature	Extrusion Nozzle Temperature	Melt Temperature	Head Temperature
Metric Units	200-220°C	220-240°C	220-240°C	210-240°C
Imperial units	392-428°F	428-464°F	428-464°F	410-464°F

### Unit Size

Net weight 25kg or 700kg.

### Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

Period of Validity: The product can be stored 12 months after the date of production in the dry environment(25°C/77°F). If out this period, the product should be tested again to make sure the property can be follow the standard request.

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

### Note

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### Product Description

SN-104 is chemically grafted polypropylene, providing an excellent adhesion of 2LPP/3LPP buried pipeline protective coating systems to the FBE.

SN-104 has good application properties and can be applied by conventional extrusion equipment. Can be used in a very wide application temperature range from -20 °C to 110 °C

### Typical Properties

Physical Properties	Typical Value	Test Method
Density	0.890 g/cm <sup>3</sup> (0.0321 lb/in <sup>3</sup> )	ASTM D792
Melt Flow	3.50g/10min(230°C/2.16kg) 0.0077lb/10min(446°F/4.76lb)	ASTM D 1238
Mechanical Properties	Typical Value	Test Method
Tensile Strength	18 MPa(2610 psi)	ASTM D 638
Elongation at Break	≥ 400%	ASTM D 638
Bonding Strength	≥ 4 kN/m(≥ 22.8 pli) ≥ 20 kN/m(≥ 114 pli)	110 °C, DIN 30678 23 °C, DIN 30678
Impact Strength	15.0 kJ/m <sup>2</sup> (7.14 ft-lb/in <sup>2</sup> )	ISO 179
Thermal Characteristic	Typical Value	Test Method
Vicat Softening Temperature	≥ 132°C(≥ 270°F)	ASTM D 1525

### Processing Parameters

Unit	Pre-heat Temperature	Extrusion Nozzle Temperature	Melt Temperature	Head Temperature
Metric Units	160-200°C	190-210°C	200-220°C	200-220°C
Imperial units	320-392°F	374-410°F	392-428°F	392-428°F

### Unit Size

Net weight 25kg or 700kg.

### Storage

Flammable. The product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 33°C.

Period of Validity: The product can be stored 6 months after the date of production in the dry environment(25°C/77°F).

If out this period, the product should be tested again to make sure the property can be follow the standard request.

### Health And Safety

Flammable. Handle with care. Before and during use, observe all safety labels on packaging and paint containers. For detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS SN-104" and follow all local or national safety regulations.

Use in well ventilated areas. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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## Product Description

SN-105 is primer that can be used in 3LPE/3LPP buried pipeline protective coating systems, which has excellent corrosion resistance and mechanical properties.

## Technical Regulation

SN-105 conforms to GB/T 23257-2009, DIN 30670, CAN/CSA Z245.20 and NACE RP0294.

## Typical Properties

Powder Physical Properties	Characteristic		Typical Value	Test Method
	Gel Time(202 ± 3 °C)		22 s(Can be adjusted if necessary)	GB/T 6554
	Curing Time (202 ± 3 °C)		2 min	GB/T 23257-2009 Appendix A
	Density		1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472
	Particle Size	More than 150 μ m powder	2.3%	GB/T 6554
	Distribution	More than 250 μ m powder	0.06%	
	Volatile Content		≤ 0.5%	GB/T 6554
	Color		Green, or red, or grey (adjustable)	Visual determination
	Thermal Characteristic	Heat Release Tg2	≥ 45 J/g ≥ 97 °C	GB/T 23257-2009 Appendix B

  

Coating Performance	Characteristic		Typical Value	Test Method
	Flexibility(-20 °C, 2.5° )		No crack	GB/T 23257-2009 Appendix E
	Impact Resistance (300-400 μ m, -30 °C)		> 2.5 J No failure	SY/T 0315-2013 Appendix F
	Cathodic Disbonding	65 °C,48 h,-1.5 v	≤ 2 mm	GB/T 23257-2009 Appendix D
		25 °C,30d,-1.5 v	≤ 6mm	
		65 °C,30 d,-1.5 v	≤ 10mm	
	Adhesion Strength		> 20 N/mm <sup>2</sup>	ASTM D 4541-02
	Adhesion		1 rating	GB/T 23257-2009 Appendix C
Interfacial Porosity		1-2 rating	SY/T 0315-2013 Appendix D	
Cross-section Porosity		2-3 rating	SY/T 0315-2013 Appendix D	

  

Application	General Application Information		Typical Requirements
	Surface Treatment		Sa2.5 according SSPC SP 10
	Surface Roughness		Anchor pattern depth 50-100 μ m

## Unit Size

Net weight 30kg.

## Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

## Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS SN-105" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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## Product Description

SN-105S is a multifunctional powder coating, can be applied as protective coating of alloy metal-pieces which contain copper, chromium, nickel, also can be applied as primer coating of 3PE/3PP for high working temperature, such as 80°C, 90°C.

## Technical Regulation

SN-105S conforms to GB/T 23257-2009, DIN 30670, CAN/CSA Z245.20 and NACE RP0294 when applied as primer coating of pipeline.

## Typical Properties

Powder Physical Properties	Characteristic		Typical Value	Test Method
	Gel Time(230 ± 3 °C)		16-21s	GB/T 6554
	Curing Time (230 ± 3 °C)		2min	GB/T 23257-2009 Appendix A
	Density		1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472
	Particle Size	More than 150 μ m powder	2.3%	GB/T 6554
	Distribution	More than 250 μ m powder	0.06%	
	Volatile Content		≤0.5%	GB/T 6554
	Color		Green, or red, or grey (adjustable)	Visual determination
	Thermal Characteristic	Heat Release Tg2	≥36 J/g ≥97 °C	GB/T 23257-2009 Appendix B

  

Coating Performance	Characteristic		Typical Value	Test Method
	Flexibility(-20 °C, 2.5° )		No crack	GB/T 23257-2009 Appendix E
	Impact Resistance (300-400 μ m, -30 °C)		> 2.5 J No failure	SY/T 0315-2013 Appendix F
	Cathodic Disbonding	65 °C,48 h,-1.5 v	≤2 mm	GB/T 23257-2009 Appendix D
	( carbon steel substrat )	25 °C,30d,-1.5 v	≤6mm	
		65 °C,30 d,-1.5 v	≤10mm	
	Cathodic Disbonding	90°C, 30d, -1.5V	≤10mm	
	( stainless steel substrat )	65°C, 48h, -1.5V	≤2mm	
		65°C, 30d, -1.5V	≤10mm	
	Adhesion Strength		> 20 N/mm <sup>2</sup>	ASTM D 4541-02
Adhesion		1 rating	GB/T 23257-2009 Appendix C	
Interfacial Porosity		1-2 rating	SY/T 0315-2013 Appendix D	
Cross-section Porosity		2-3 rating	SY/T 0315-2013 Appendix D	

  

Application	General Application Information		Typical Requirements
	Surface Treatment		Sa2.5 according SSPC SP 10
	Surface Roughness		Anchor pattern depth 50-100 μ m

## Unit Size

Net weight 30kg.

## Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

## Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS 105S" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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### Product Description

SN-105HT is a high performance powder coating for 3PP pipeline as primer coating when pipeline operating temperature 90–120°C.

### Technical Regulation

SN-105HT conforms to GB/T 23257–2009, DIN 30670, CAN/CSA Z245.20 and NACE RP0294 when applied as primer coating of pipeline.

### Typical Properties

Powder Physical Properties	Characteristic		Typical Value	Test Method
	Gel Time(230 ± 3 °C)		16–21s	GB/T 6554
	Curing Time (230 ± 3 °C)		2min	GB/T 23257–2009 Appendix A
	Density		1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472
	Particle Size	More than 150 μ m powder	3%	GB/T 6554
	Distribution	More than 250 μ m powder	0.2%	
	Volatile Content		≤ 0.6%	GB/T 6554
	Color		Green, or red, or grey (adjustable)	Visual determination
	Thermal Characteristic	Heat Release Tg2	≥ 38 J/g ≥ 128 °C	GB/T 23257–2009 Appendix B

  

Coating Performance	Characteristic		Typical Value	Test Method
	Flexibility(–20 °C, 2.5° )		No crack	GB/T 23257–2009 Appendix E
	Impact Resistance (300–400 μ m, –30 °C)		> 2.5 J No failure	SY/T 0315–2013 Appendix F
	Cathodic Disbonding	95 °C,30 d,–1.5 v 90 °C,30d,–1.5 v	≤ 15 mm ≤ 10mm	GB/T 23257–2009 Appendix D
	Adhesion Strength		> 20 N/mm <sup>2</sup>	ASTM D 4541–02
	Adhesion		1 rating	GB/T 23257–2009 Appendix C
	Interfacial Porosity		1–2 rating	SY/T 0315–2013 Appendix D
	Cross–section Porosity		2–3 rating	SY/T 0315–2013 Appendix D

  

Application	General Application Information		Typical Requirements
	Surface Treatment		Sa2.5 according SSPC SP 10
	Surface Roughness		Anchor pattern depth 50–100 μ m

### Unit Size

Net weight 30kg.

### Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

### Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet “MSDS 105HT” and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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## Product Description

SN-105D is FBE powder that can be used in 3LPE/3LPP buried pipeline protective coating system, which is designed for high steel grade line pipe coating and has low (< 200°C) curing temperature and excellent corrosion resistance and mechanical properties.

## Technical Regulation

SN-105D conforms to GB/T 23257-2009, DIN 30670, CAN/CSA Z245.20 and NACE RP0294.

## Typical Properties

Powder Physical Properties	Characteristic		Typical Value	Test Method
	Gel Time(190 ± 3 °C)		20s(Can be adjusted according to technology)	GB/T 6554
	Curing Time (190 ± 3 °C)		2 min	GB/T 23257-2009 Appendix A
	Density		1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472
	Particle Size	More than 150 μ m powder	≤ 2.3%	GB/T 6554
	Distribution	More than 250 μ m powder	≤ 0.06%	
	Volatile Content		≤ 0.5%	GB/T 6554
	Color		Green	Visual determination
	Thermal Characteristic	Heat Release Tg2	≥ 45J/g ≥ 97 °C	GB/T 23257-2009 Appendix B

  

Coating Performance	Characteristic		Typical Value	Test Method
	Flexibility(-20 °C, 2.5° )		No crack	GB/T 23257-2009 Appendix E
	Impact Resistance (300-400 μ m, -30 °C)		> 3.0 J No failure	SY/T 0315-2013 Appendix F
	Cathodic Disbonding	65 °C,48 h,-1.5 v	≤ 3 mm	GB/T 23257-2009 Appendix D
		25 °C,30 d,-1.5 v	≤ 6 mm	
		65 °C,30 d,-1.5 v	≤ 10mm	
	Adhesion Strength		> 20 N/mm <sup>2</sup>	ASTM D 4541-02
	Adhesion		1 Class	GB/T 23257-2009 Appendix C
Interfacial Porosity		1-2 Class	SY/T 0315-2013 Appendix D	
Cross-section Porosity		2-3 Class	SY/T 0315-2013 Appendix D	

  

Application	General Application Information		Typical Requirements
	Surface Treatment		Sa2.5 according to SSPC SP 10
	Surface Roughness		Anchor pattern profile: 50-100 μ m

## Unit Size

Net weight 30kg.

## Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

## Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS 105D" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

## Note

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### Product Description

SN-106 is a single layer FBE powder that can be used in buried pipeline protective coating system, which has excellent corrosion resistance and mechanical properties, recommended dual-layer(SN 106+SN-107) coating thickness 600-1000 μm.

### Technical Regulation

SN-106 conforms to SY/T 0315-2013 and NACE RP0394.

### Typical Properties

Characteristic		Typical Value	Test Method	
Powder Physical Properties	Gel Time(190 ± 3 °C)	20-30 s	GB/T 6554	
	Curing Time (190 ± 3 °C)	120 s	SY/T 0315-2013 Appendix A	
	Density	1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472	
	Particle Size	More than 150 μm powder	≤ 2.5%	
	Distribution	More than 250 μm powder	≤ 0.1%	
	Volatile Content		≤ 0.5%	
	Color		Blue, red, grey	
	Thermal Characteristic	Heat Release	47-55 J/g	SY/T 0315-2013 Appendix B
		Tg2	102 ± 3 °C	
		Magnetic Particles Content	≤ 0.001%	JB/T 6570
Characteristic		Typical Value	Test Method	
Coating Performance	Flexibility(3° )(-30 ± 3 °C, 400 ± 50 μm)	No crack	SY/T 0315-2013 Appendix E	
	Impact Resistance ( 1.5 J, 300-400 μm, -30 °C)	No failure	SY/T 0315-2013 Appendix F	
	Cathodic Disbonding	65 °C, 48 h, -1.5 v	≤ 2 mm	
	Resistance	25 °C, 30d, -1.5 v	≤ 6 mm	SY/T 0315-2013 Appendix C
	Adhesion Strength	65 °C, 30 d, -1.5 v	≤ 12 mm	
	Adhesion		> 20 MPa	ASTM D 4541-02
	Interfacial Porosity		1 Class	SY/T 0315-2013 Appendix G
	Cross-section Porosity		2 Class	SY/T 0315-2013 Appendix D
	Abrasive Resistance (Falling sand method)		2-3 Class	
	Electric Strength		≥ 3 L/μm	SY/T 0315-2013 Appendix J
Volume Resistivity		≥ 40 V/μm	ASTM D 149	
		≥ 1 × 10 <sup>13</sup> Ω · m	ASTM D 257	
General Application Information		Typical Requirements		
Application	Surface Treatment	Sa2.5 according to SSPC SP 10		
	Surface Roughness	Anchor pattern profile: 50-100 μm		
	Coating Thickness	300-600 μm		

### Unit Size

Net weight 30kg.

### Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

### Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS 106" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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### Product Description

SN-107 + SN-106 is a Dual Layer fusion bonded epoxy system that can be used in buried pipeline protective coating, SN-106 is used as primer, top layer formed by SN-107, which has excellent corrosion and abrasion resistance and mechanical properties, recommended SN-107 coating thickness 370-500 μm.

### Technical Regulation

SN-107 can be applied with SN-106 for buried pipe anti-corrosion. Technical specifications for Dual Layer Fusion Bond Epoxy Powder External Coating conforms to SY/T 0315-2013, AS 3862-2002 and CSA Z.235.20-02.

### Typical Properties

Characteristic		Typical Value	Test Method	
Powder Physical Properties	Gel Time (230 °C)	12-16 s	Q/CNPC Appendix A	
	Curing Time (232 ± 3 °C)	2 min	SY/T 0315-2013 Appendix A	
	Density	1.42 ± 0.05 g/cm <sup>3</sup>	GB/T 4472	
	Particle Size	More than 150 μm powder	≤ 3%	
	Distribution	More than 250 μm powder	≤ 0.1%	
	Q/CNPC Appendix C			
	Volatile Content	≤ 0.5%	Q/CNPC Appendix B	
	Color	Green (adjustable)		
	Thermal Heat Release Characteristic	Tg2	48-58 J/g	SY/T 0315-2013 Appendix B
	105 ± 3 °C			
Magnetic Particles Content	≤ 0.001%	JB/T 6570		
Characteristic		Typical Value	Test Method	
Coating Performance	Flexibility(-30 °C, 2° )	No crack	Q/CNPC Appendix D	
	Impact Resistance(3 J)	No failure	SY/T 0315-2013 Appendix F	
	Dual-layer	65 °C,48 h,-1.5 v	≤ 2 mm	
	Cathodic	25 °C,28 d,-1.5 v	≤ 5 mm	SY/T 0315-2013 Appendix C
	Disbonding	65 °C,30 d,-1.5 v	≤ 10mm	
	Adhesion Strength	> 20 N/mm <sup>2</sup>	ASTM D 4541-02	
	Adhesion	1 Class	SY/T 0315-2013 Appendix G	
	Interfacial Porosity	2 Class	SY/T 0315-2013 Appendix D	
	Cross-section Porosity	2-3 Class	SY/T 0315-2013 Appendix D	
	Scratch Resistance(30 kg)	Scratch depth ≤ 350 μm No failure	Q/CNPC Appendix F	
Tarber abrasive(mg)	≤ 150mg	ASTM D 4060		
Electric Strength	≥ 40 V/μm	ASTM D 149		
Volume resistivity	≥ 1 × 10 <sup>13</sup> Ω · m	ASTM D 257		
General Application Information		Typical Requirements		
Application	Surface Treatment	Sa2.5 according to SSPC SP 10		
	Surface Roughness	Anchor pattern profile: 50-100 μm		
	Coating Thickness	600-1000 μm		

### Unit Size

Net weight 30kg.

### Storage

This product must be transported and stored in accordance with national regulations. Product barrel should be tightly closed, undamaged, avoid direct sun and rain. Storage should be well ventilated, dry and cool, away from source of fire and living place, storage temperature should not exceed 25°C and relative humidity should not exceed 65%.

### Health And Safety

Handle with care. Prior to use, review all safety labels on packaging and paint containers. Detailed information on the health and safety hazards and precautions for use of this product, refer to the Material Safety Data Sheet "MSDS 107" and follow all local or national safety regulations.

Use in well ventilated areas. Eyes should be well flushed with water and medical attention sought immediately. Take precautions against possible risks of fire or explosions as well as protection of the environment.

### Note

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## Product Description

SN-109 is a two-component modified epoxy coating material which can be cured at ambient temperature. It has excellent adhesion, abrasion resistance, and excellent chemical resistance. Coating surface is smooth and glossy, enhancing flow efficiency more than 25%. SN-109 can significantly reduce pressure or extend the distance between compressor stations.

## Recommended Uses

SN-109 is recommended in the internal surface of gas pipelines. It conforms to API RP 5L2, SY/T 6530-2010, Q/CNPC37-2002, Q/SY GJX0107-2007 and other technical specifications.

## Product Information

Colour	Binder SN109A: iron red Curing agent SN109B: colorless
Volume Solids	≥50%
Density	Binder: 1.38 ± 0.02 g/cm <sup>3</sup> Curing agent : 1.00 ± 0.02 g/cm <sup>3</sup>
Mix Ratio	Part A(Base) to Part B(Curing Agent)=1: 1 ( by volume )

## Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	50	115	75
Wet Film Thickness, μm	96	225	150
Theoretical Spreading Rate, m <sup>2</sup> /L	10.4	4.4	6.6

## Drying Information

Substrate Temperature	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )	60°C ( 140°F )
Touch Dry	6h	4h	1h	0.5h
Through Dry	30h	20h	12h	2h
Cured	14d	7 d	3d	1d
Dry to Recoat, minimum <sup>1</sup>	30h	20h	12h	2h
Dry to Recoat, maximum <sup>1,2</sup>	5d	3d	2d	8h

<sup>1</sup> Before recoating, the surface should be dry and free of contamination.

<sup>2</sup> For coating optimum performance, ambient temperature should be above 10°C ( 50°F ) .

The above data is only for guidance depending on actual local conditions (film thickness, ventilation, humidity, temperature, handling etc.), actual drying or recoating intervals may be shorter or longer.

## Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504. Minimum Sa2.5 (ISO 8501-1:2007) after blasting.

Roughness: Anchor profile: 50-85 μm, Ry5, (ISO 8503-2).

## Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3°C ( 37°F ) above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	SN-109 thinner
Two Parts Airless Spray	Recommended Total output fluid pressure at spray tip no less than 15MPa (150 kg/cm <sup>2</sup> ). Tip Range 0.46-0.69 mm (0.018-0.027in.) Spray rate 40° - 80°
One Parts Airless Spray	Mixing: 1 part A (base) and 1 part B (curing agent), stir intensively until homogenized. Pot Life ( 23°C, 73°F ): 3 Hours (reduced at higher temperature) Total output fluid pressure at spray tip no less than 15MPa (150 kg/cm <sup>2</sup> ,2100psi). Tip Range 0.46-0.69 mm (0.018-0.027in.) Spray rate 4040° - 80°
Brush	Application by brush is recommended for small areas only. Multiple coats may be required to achieve specified film thickness
Roller	Application by roller is recommended for small areas only. Multiple coats may be required to achieve specified film thickness
Note	Check to ensure that filters are clean.

## Unit Size

260Kg part A (Base) in an 200 litres container, 180Kg part B (Curing Agent) in a 200 litres container  
OR 26Kg part A (Base) in an 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container

## Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33°C (91°F).

Shelf life is 12 months from time of production under 25°C ( 77°F ) .

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

SN-109SF is a two-component solvent free modified ambient cured epoxy coating material, which has excellent adhesion, abrasion resistance, and excellent chemical resistance. It is safe and environmental friendly. Coating surface is smooth and glossy, enhancing flow efficiency more than 25%. SN-109SF can significantly reduce pressure or extend the distance between compressor stations.

## Recommended Uses

SN-109SF is recommended in the internal surface of gas pipelines. It conforms to API RP 5L2, SY/T 6530-2010, Q/CNPC37-2002, Q/SY GJX0107-2007 and other technical specifications.

## Product Information

Colour	Binder SN-109SFA: iron red Curing agent SN-109SFB: brown
Volume Solids	95% ± 2%
Density	Binder: 1.38 ± 0.02 g/cm <sup>3</sup> Curing agent : 1.00 ± 0.02 g/cm <sup>3</sup>
Mix Ratio	Part A(Base) to Part B(Curing Agent)=3: 1 ( by volume )

## Film Thickness and Spreading Rate

	Minimum	Maximum	Typical
Dry Film Thickness, μm	60	150	75
Wet Film Thickness, μm	62	155	77
Theoretical Spreading Rate, m <sup>2</sup> /L	16.1	6.5	12.9

## Drying Information

Substrate Temperature	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )	60°C ( 140°F )
Touch Dry	4h	2h	40min	20min
Through Dry	24h	16h	8h	1h
Cured	14d	7d	3d	1d
Dry to Recoat, minimum <sup>1</sup>	30h	20h	12h	2h
Dry to Recoat, maximum <sup>1,2</sup>	5d	3d	2d	8h

<sup>1</sup> Before recoating, the surface should be dry and free of contamination.

<sup>2</sup> For coating optimum performance, ambient temperature should be above 10°C ( 50°F ) .

The above data is only for guidance depending on actual local conditions (film thickness, ventilation, humidity, temperature, handling etc.), actual drying or recoating intervals may be shorter or longer.

## Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504. Minimum Sa2.5 (ISO 8501-1:2007) after blasting.

Roughness: Anchor profile: 50-85 μm, Ry5, (ISO 8503-2).

## Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3°C ( 37°F ) above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Two Parts Airless Spray	Recommended Total output fluid pressure at spray tip 25-35MPa (3600-5000psi). Tip Range 0.46-0.69 mm (0.018-0.027in.) Spray rate 40° - 80°
Brush	Application by brush is recommended for small areas only. Multiple coats may be required to achieve specified film thickness
Roller	Application by roller is recommended for small areas only. Multiple coats may be required to achieve specified film thickness

## Unit Size

260Kg part A (Base) in an 200 litres container, 180Kg part B (Curing Agent) in a 200 litres container  
 OR 26Kg part A (Base) in an 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container

## Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33°C (91°F).

Shelf life is 12 months from time of production under 25°C ( 77°F ) .

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

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## Product Description

SN-6030 is a modified epoxy heat-resistant coating with unique composition of heat resistant pigments, additives and advanced production technology.

- Ambient cure
- Excellent flexibility and adhesion
- Heat resistant up to 200°C ( 392°F )
- Excellent corrosion resistance

## Recommended Uses

SN-6030 is recommended for corrosion protection in metallurgy, oil-gas and chemical industry at temperatures below 200°C ( 392°F ) . Also can be used for corrosion protection of oil pipelines and steel structures.

## Product Information

Colour	Black, Gray, Green
Volume Solids	≥70%
Mix Ratio	Part A(Base) to Part B(Curing Agent)=100: 2.5 ( by mass )

## Drying Information

Substrate Temperature	10°C ( 50°F )	25°C ( 77°F )	40°C ( 104°F )
Touch Dry	16h	1h	0.5h
Hard Dry	168h	72h	4h
Cure	15d	7 d	3d

## Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504:2000. Minimum Sa2.5 (ISO 8501-1:2007) after blasting ,or SSPC SP6 abrasive jet processing standard, or SSPC SP11 power tool cleaning standards;

Roughness: Anchor profile: 50-85 μ m, Ry5(ISO 8503-2).

Other: Please consult local Hilonggroup.

## Application

Application Condition	Substrate temperature should not be lower than 10°C ( 50°F ) and at least 3°C ( 37.4°F ) above the dew point. Enclosed spaces should have adequate ventilation to ensure proper drying. If using forced ventilation, do not aim hot air flow to the coated surface to avoid surface crust and solvent hold-up. Avoid contact of oil, chemicals and physical action with uncured coating.
Mixing ratio	100 mass parts of component A (Base) and 2.5 mass part of component B (Curing agent), stir intensively until homogenized.
Thinner	Special thinner, do not exceed the local environmental protection regulations.
High-speed rotating spray	Recommended Nozzle tip 0.078in-0.157in Pressure at nozzle 20-30MPa ( 2900-4350p.s.i ) Filter Min. 60 mesh recommended. Check to ensure that filters are clean.
Brush	Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness.
Note	1.It is of vital importance that the nozzle and other parts of the spraying equipment are cleaned properly directly after the work is done due to the short pot life. 2.The hoses should be of good quality and not longer than necessary. 3.The temperature of base and curing agent is recommended to be below 23°C ( 73.4°F ) when the paint is mixed due to the short pot life.

## Unit Size

24Kg part A (Base) in a 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition.

Shelf life is 12 months from time of production.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

SN-6200 is a new two-component solvent free epoxy-phenolic coating. Material has excellent mechanical properties and chemical resistance, and can adapt to high use environment temperature.

- Good adhesion
- Excellent resistance to mud acid
- Good corrosion resistance
- Excellent sewage water resistance
- Excellent Crude Oil resistance
- Excellent resistance to Gasoline, Diesel, Kerosene Resistance

## Recommended Uses

SN-6200 is recommended for corrosion protection of internal surfaces of steel oil tanks, it is resistant to crude oil, aromatic, aliphatic and other chemicals. And it is internal protective coating that is suitable for conveying corrosive medium, crude oil, and sewage pipeline.

## Product Information

Colour	Green
Volume Solids	98% ± 2%
Mix Ratio	Part A(Base) to Part B(Curing Agent)=4.0: 1 ( by volume )

## Drying Information

Substrate Temperature	10°C ( 50°F )	25°C ( 77°F )	40°C ( 104°F )
Touch Dry	15h	6h	1.5h
Hard Dry	30h	12h	4h
Cure	10d	5d	3d
Min. Time Before Overcoating	30h	12h	4h
Max. Time Before Overcoating	10d	14d	5d

## Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504:2000. Minimum Sa2.5 (ISO 8501-1:2007) after blasting ,or SSPC SP6 abrasive jet processing standard, or SSPC SP11 power tool cleaning standards;

Roughness: Anchor profile: 50-85 μ m, Ry5, (ISO 8503-2).

Other: Please consult local Hilonggroup.

## Application

Application Condition	Substrate temperature should not be lower than 10°C ( 50°F ) and at least 3°C ( 37.4°F ) above the dew point. Enclosed spaces should have adequate ventilation to ensure proper drying. If using forced ventilation, do not aim hot air flow to the coated surface to avoid surface crust and solvent hold-up. Avoid contact of oil, chemicals and physical action with uncured coating.
Mixing ratio	4.0 volume parts of component A (Base) and 1 volume part of component B (Curing agent), stir intensively until homogenized.
Thinner	Special thinner, do not exceed the local environmental protection regulations.
Guiding data airless spray	Recommended Nozzle tip 0.53-0.66 mm ( 0.021in-0.025in ) Pressure at nozzle 25-35MPa ( 3600-5000p.s.i ) Spray angle 40° - 80° Filter Min. 60 mesh recommended. Check to ensure that filters are clean.
Brush	Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness.
Note	4.It is of vital importance that the nozzle and other parts of the spraying equipment are cleaned properly directly after the work is done due to the short pot life. 5.The hoses should be of good quality and not longer than necessary. 6.The temperature of base and curing agent is recommended to be below 23°C ( 73.4°F ) when the paint is mixed due to the short pot life. 7.If viscosity is too high components A could be preheated using water bath to 60-70°C ( 140-158°F ) .

## Unit Size

24Kg part A (Base) in a 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition.

Shelf life is 12 months from time of production.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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## Product Description

TC-3000H is a two component solvent free epoxy coating cured at room temperature. Material is non-toxic and conforms to hygiene standards for drinking water pipelines. Material has excellent mechanical properties and chemical resistance.

- Good flexibility
- Excellent adhesion
- Excellent water resistance
- Excellent chemical resistance
- Excellent cathodic disbonding

## Recommended Uses

Material can be used for inside surface protection of drinking water pipes and tanks. Material is resistant to corrosive media as water, brine and slurry.

## Product Information

Colour	White, light gray and other colours
Volume Solids	98% ± 2%
Mix Ratio	Part A(Base) to Part B(Curing Agent)=2.8: 1 ( by volume )

## Surface Treatment

Cleanliness: Surface should be clean, dry and free from dirt, and conform to ISO 8504:2000. Minimum Sa2.5 (ISO 8501-1:2007) after blasting, or SSPC SP6 abrasive jet processing standard, or SSPC SP11 power tool cleaning standards;

Roughness: Anchor profile: 50-85 μm, Ry5, (ISO 8503-2).

Other: Please consult local Hilonggroup.

## Drying Information

Temperature	10°C ( 50°F )	25°C ( 77°F )	40°C ( 104°F )
Touch Dry	15h	4h	1.5h
Hard Dry	30h	16h	4h
Cure	10d	7 d	3d
Min. Time Before Overcoating	30h	12h	4h
Max. Time Before Overcoating	96h	48h	18h

## Application

Application Condition	Substrate temperature should not be lower than 10°C ( 50°F ) and at least 3 °C ( 37.4°F ) above the dew point. Enclosed spaces should have adequate ventilation to ensure proper drying. If using forced ventilation, do not aim hot air flow to the coated surface to avoid surface crust and solvent hold-up. Avoid contact of oil, chemicals and physical action with uncured coating.
Mixing ratio	2.8 volume parts of component A (Base) and 1 volume part of component B (Curing agent), stir intensively until homogenized.
Thinner	Special thinner, do not exceed the local environmental protection regulations.
Guiding data airless spray	Recommended Nozzle tip 0.53-0.66mm(0.021in-0.025in) Pressure at nozzle 25-35MPa Spray angle 40° - 80° Filter Min. 60 mesh recommended. Check to ensure that filters are clean.
Brush	Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness.
Note	8.It is of vital importance that the nozzle and other parts of the spraying equipment are cleaned properly directly after the work is done due to the short pot life. 9.The hoses should be of good quality and not longer than necessary. 10.The temperature of base and curing agent is recommended to be below 23°C ( 73.4°F ) when the paint is mixed due to the short pot life. 11.If viscosity is too high components A could be preheated using water bath to 60-70°C ( 140-158°F ) .

## Unit Size

24Kg part A (Base) in an 20 litres container, 18Kg part B (Curing Agent) in a 20 litres container.

## Storage

Store in dry, shaded conditions away from sources of heat and ignition.

Shelf life is 12 months from time of production.

## Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

## Note

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### Product Description

SN-8010 is a one component protective coating with high heat resistance. Material has fast dry time, good adhesion, welding smoke is non toxic and minor, burn off area is small.

- Adhesion good
- Corrosive resistance good
- Aging resistance good

### Recommended Uses

Material is recommended for temporary protection of weld grooves, can be easily used for steel tanks and pipelines welds. Coating can protect welds during welding operations. Compatible to all types of welding including manual welding, semi-automatic welding, submerged arc welding etc., do not affect welding quality and performance. Material does not produce toxic fumes, and is easily removed after welding. After welding is complete, remove the burned part and apply a new layer of SN-8010. Material conforms to GB/T 6747-2008 standard and other relevant regulations.

### Product Information

Color	Silver
Viscosity, cup-4	≥20s
Particle size, μm	≤70
Touch dry time, min	≤5

### Surface Treatment

Surface to be coated should be clean, dry and free from dirt, and conform to ISO8504 standard.  
 Surface cleanliness: Abrasive blast cleaning to Sa2 1/2 and higher (ISO 8501-1:2007) or using high pressure water jetting to WJ 2 (NACE No. 5/SSPC-SP 12). Use suitable abrasive to achieve roughness grade Medium 30-85 micron (ISO 8503-2).

### Film Thickness and Spreading Rate

	Minimum	Maximum
Dry Film Thickness, μm	15	25
Wet Film Thickness, μm	147	245
Theoretical Spreading Rate, m <sup>2</sup> /L	6.8	4.1

### Drying Information

	5°C ( 41°F )	10°C ( 50°F )	23°C ( 73°F )	40°C ( 104°F )
Surface dry	30 Minutes	15 Minutes	5 Minutes	4 Minutes
Through dry	3 Hours	1 Hours	30 Minutes	20 Minutes
Dry to recoat, minimum	10 Hours	5 Hours	3 Hours	2 Hours

### Application

Application Condition	The temperature of the substrate should be minimum 5°C ( 41°F ) and at least 3 ( 37°F ) °C above the dew point of the air. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity as this can result in loss of gloss.
Thinner	SN-8010 thinner
One Parts Airless Spray	Total output fluid pressure at spray tip no less than 10MPa (1500psi). Tip Range 0.46-0.69 mm (0.018-0.027in.) Spray rate 30° - 80°
Brush	Application by brush is recommended for small areas only. Multiple coats may be required to achieve specified film thickness
Roller	Application by roller is recommended for small areas only. Multiple coats may be required to achieve specified film thickness

### Unit Size

18Kg coating in 20 liters container.

### Storage

Store in dry, shaded conditions away from sources of heat and ignition. Environment temperature should be no more than 33°C (91°F).  
 Shelf life is 12 months from time of production under 25°C ( 77°F ) .

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations.

### Note

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### Product Description

A two component solvent free polyurethane coating exclusively used in metal pipe. With excellent mechanical and anti-corrosive performances.

- Good flexibility in low temperature
- High mechanical strength
- Good adhesion, excellent abrasive resistance
- Good chemical resistance
- Excellent resistance to the salt spray
- Application Temperature : -10°C ( -50°F ) ~ 35°C ( 95°F )

### Recommended Uses

Suitable for buried steel structure, pipeline inside and outside heavy duty anti-corrosion. Consist high whether resistance protective system with the HilonDeco PU 9450. Applicable for the outdoor steel structure and pipeline outside anti-corrosive.

### Product Information

Colour	various colors
Gloss	Glossy, adjustable
Volume Solids	100%
Typical Thickness	300-800 microns dry
Mix Ratio	Part A (Base) : Part B (Curing Agent) = 3 : 1 (by volume)
Flash Point	Part A > 101°C ( 213.8°F ) ; Part B > 101°C ( 213.8°F ) ; After mixing > 101°C ( 213.8°F )

### Drying Time And Overcoating Interval

Temperature	30°C ( 77°F )	40°C ( 104°F )	50°C ( 104°F )
Touch Dry	10 minutes	5 minutes	3minutes
Hard Dry <sup>#</sup>	1 hr	0.5 hr	0.5 hr

<sup>#</sup> It is the time that the products could be removable and will not leave clear scratch on surface.

### Surface Treatment

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:2000. Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Abrasive blast clean to Sa2.5 (ISO 8501-1:2007) or SSPC-SP6, or SSPC SP11 power tools cleaning standard.

A surface profile of 50-85 microns is recommended according to ISO 8503-2.

Others: Please consult the local Hilongroup.

### Application

Application Condition	Surface temperature must always be a minimum of 3°C ( 5°F ) above dew point. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity. If aqueous vapor condensation occurs during or just after the applications, the surface will lose the gloss, and the film quality gets worse.
Mixing	Well agitate Part A (Base) alone first. Then combine 3 volume of Part A with 1 volume of Part B and mix thoroughly with power agitator.
Thinner	Special thinner, do not exceed the local environmental protection regulations.
Airless spray	Need to use 2 components high pressure airless spray gun, Tip Range 23-40 thou. Total output fluid pressure at spray tip not less than 21 MPa. In the application process, need to use online heater to raise the Base temperature to 60°C ( 140°F ) ~65°C ( 149°F ) , the Curing Agent temperature to 15°C ( 59°F ) . Pumping pipe need heating and insulation to keep the temperature of the coating. Filter is recommended to use strainer mesh (60 mesh). Check often and ensure the strainer mesh clean.
Brush / Roller	Small areas reparation only, should pay attention to the pot life.
Tools Cleaner	Hilonggroup THR500

### Systems Compatibility

Indoors : Could be used independently.

Outdoors : Recommended to be used with HilonDeco PU 9450 or other top coating.

### Unit Size

18Kg coating in 20 liters container.

### Storage

Must be stored in accordance with national regulations. Store in dry, shaded conditions away from sources of heat and ignition. See the MSDS.

Shelf Life 12 months minimum at 25°C ( 77°F ) . Subject to re-inspection thereafter.

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations. Warning: including isocyanate. Using gas helmet when application.

### Note

The information in this data sheet is not intended to be exhaustive, for your reference only. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. Please contact us and request the latest version prior to using the product.



### Product Description

HilonDeco PU 9450 is a two component solvent free polyurethane coating, cured by using of aliphatic isocyanate.

- 100% solid content
- Excellent weatherability
- Excellent flexibility, abrasive resistance and impact resistance

### Recommended Uses

Aliphatic polyurethane finish coating, with suitable primers, will conform the high performance protective system. Widely used in various atmospheric environmental conditions with weathering performance requirements. Including the pipeline structure, petrochemical plants, factories and mines area, offshore facilities etc. Using the two-component pump construction, fast curing, remarkably improve the production efficiency of construction site.

### Product Information

Colour	various colors
Gloss	Highlight
Volume Solids	100% ± 3% (According to the colour)
Typical Thickness	70–300 microns dry equivalent to 70–300 microns wet
Theoretical Coverage	10.0 m <sup>2</sup> /litre at 100 microns d.f.t and stated volume solids
Mix Ratio	Part A (Base) : Part B (Curing Agent) = 2.5 : 1 (by volume)
Flash Point	Part A > 101°C ( 213.8°F ) ; Part B > 101°C ( 213.8°F ) ; After mixing > 101°C ( 213.8°F )

### Drying Time And Overcoating Interval

Temperature	30°C ( 77°F )	40°C ( 104°F )	50°C ( 104°F )
Touch Dry	10 minutes	5 minutes	3minutes
Hard Dry*	1 hr	0.5 hr	0.5 hr

\* It is the time that the products could be removable and will not leave clear scratch on surface.

### Surface Preparation

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application all surfaces should be assessed and treated in accordance with ISO 8504:2000. Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

Primed Surfaces	Should always use on the recommended anti-corrosive primers and middle paints. Primers' surfaces should be dry and free from contamination. The applications must be in the specified recoating interval time. (Please see the related product data sheet) Breaks and damages should treated to specified standard. For example: Sa2.5 (ISO 8501-1:2007). And reparation of the primers before application.
Others	Please consult local Hilonggroup.

### Application

Application Condition	Surface temperature must always be a minimum of 3°C(5°F) above dew point. Good ventilation is required in confined areas to ensure proper drying. During application and the initial drying of the coating, the coating should not be exposed to high humidity. If aqueous vapor condensation occurs during or just after the applications, the surface will lose the gloss, and the film quality gets worse.
Mixing	Well agitate Part A (Base) alone first. Then combine 2.5 volume of Part A with 1 volume of Part B and mix thoroughly with power agitator.
Pot Life	> 1min (40°C, 104°F)
Thinner	Not Applicable
Airless Spray	Recommended Base and Curing Agent could probably need preheat. Tip Range 21–25 thou, Nozzle Pressure 27 MPa.
Brush / Roller	Small areas reparation only, should pay attention to the pot life.
Tools Cleaner	Hilonggroup THR500

### Systems Compatibility

Recommended primer are : HilonThane 5700.  
For other suitable coating systems, please consult local Hilonggroup.

### Unit Size

20 litres part A (Base) in a 20 litres container, 20 litres part B (Curing Agent) in a 20 litres container.

### Storage

Must be stored in accordance with national regulations. Store in dry, shaded conditions away from sources of heat and ignition. See the MSDS.  
Shelf Life 12 months minimum at 25°C(77°F). Subject to re-inspection thereafter.

### Health And Safety

Prior to use, obtain, consult and follow the Material Safety Data Sheet for this product concerning health and safety information, and apply and use the coating according to the national state of health and safety as well as environmental protection standards and regulations. Warning: including isocyanate. Using gas helmet when application.

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