ZINCOT N-50

Heavy zinc-powdered antirust agent

Aerosol 420ml/can, 20cans/Box

There has been a great deal of advancement within the infrastructure industry in modern times, and most devices are subject to serious corrosion under various operating conditions such as steel bridges, bullet train rails, drill plants for petroleum and gas, petroleum storage tanks and facilities, cement factories, water and waste water treatment plants and more. With each of these situations having conditions that vary in severity, or have different chemical or environmental factors, the development of anti-corrosion metals and new rust prevention methods from the material engineering perspective, to protect these structures, are necessary and desirable. There has been satisfactory achievement regarding which method of coating best provides rust prevention and corrosion inhibition. These new developments are finding more economical and convenient ways to save resources and energy, while also reducing corrosion damage. These advancements are most beneficiaries with methods that create film or coating, regardless of the size and form on which application is made, as well as repainting, and are ideal alternatives to these maintenance requirements.

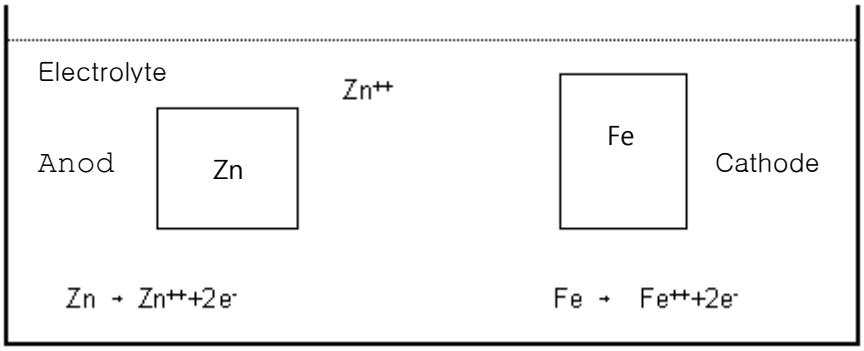
The chemical or electrochemical theories on the fundamental mechanisms of rusting are generally accepted. Most metals used in the construction of facilities are subject to corrosion. This is due to the high energy content of the elements that occur in metallic form. As the energy content of metals and alloys are higher than that of their original ores, chemical re-combination of the metals from ore like compounds is a natural process. As in all chemical reactions, corrosive reactions occur through an exchange of electrons. In electrochemical reactions, the electrons are produced by a chemical reaction in one area, the anode, travels through a metallic path and is consumed through a different chemical reaction in another area, the cathode. In some cases, such as the common dry cell battery, the electrochemical reactions can be used to supply useful amounts of electrical current. According to this theory, the electrical potential formed at the contact points between water and the metallic surface causes rusting. The consequential electrochemical cell turns the metal to a positively charged metal ion in the electrolyte and becomes $Fe(OH)_2$ as the result of a reaction with water, then $Fe(OH)_3$ and finally Fe_2O_3. This natural process can be prevented by following;

1) A uniformed and even metal surface that minimizes the electric potential. (Surface finish)
2) Either anode or cathode, in the mechanism, should be inhibited. (Electric method)
3) Highly electric-resistant coatings are applied to the metal surface. (Coating method)

Rust-preventive paints are used to facilitate prevention of rusting based on this theory, which includes zinc dust anti-corrosive paint. This paint uses an anode-inhibiting method which is often followed by a heavy

anti-corrosive painting method. The latter method uses epoxy resin, tar epoxy resin, or urethane paints as an overcoating that is ideal in corrosion- prone environments.

Zinc dust anti-corrosive paints use the higher electric potential of zinc over iron, where a local dry cell is formed, as in the picture below, and electrons pass to iron (-) from zinc (+), which causes the rusting of zinc instead of the metal.



Heavy anti-corrosive paint and coating

The application of heavy anti-corrosive paint is used in marine environments such as above sea, submerged or underwater conditions.

The method is ideal for structures which are hard to maintain on economic and environmental accounts yet require long-term anti-corrosion protection.

The painting system generates thicker coatings or films of protection, compared with other conventional methods.

The application of this method includes marine structures, bridges, ships, generator facilities, petro-chemical plants and oil refinery plants which are subject to heavy corrosion attacks.

Characteristics required for heavy anti-corrosion painting method.

Higher water- and humidity-resistance

Penetration of water and oxygen should be prevented to form the rust, which is why the paint should minimize water and oxygen penetration, and water absorption.

Superior acid- and alkaline resistance

The paint should protect metals from rust-causing elements such as chlorine gas, carbon dioxide, acids or alkaline material.

Superior physical property

Higher requirements for hardness and elasticity are recommended to protect the coating from impact and abrasions.

Superior weather-resistance and durability

Most freshly painted coats show relatively high weather resistance for rain, wind, sunlight and water, but higher requirements of protection are required to be a good heavy anti-corrosive paint.

Superior maintenance and painting workability

Superior binding or adhesiveness to the metal or painted surface.

Thick coats of paint should be created.

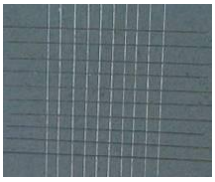
ZINCOT N-50 is manufactured containing 98% pure zinc dust, with a very high binding or adhesiveness to metal, steel and aluminum surfaces with its electrochemical reactions inhibiting and preventing rust from forming at room temperature.

The specialized binder contained in ZINCOT N-50 improves the adhesiveness of zinc to the metal surface and the electrochemical reaction for a better anti-corrosiveness of the product. The zinc, with its characteristics for superior chemical activity, interacts with the damaged or scratched coats of paint to form a highly stable insoluble zinc salt that works as an anti-corrosive. Due to self-curing characteristics, ZINCOT N-50 provides a semi-permanent anti-corrosiveness to the structures coated with the paint. ZINCOT N-50 is also a popular welding primer and anti-corrosive undercoating material.

Features

Superior adhesive strength

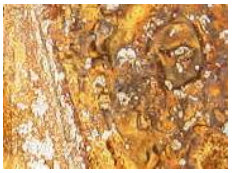
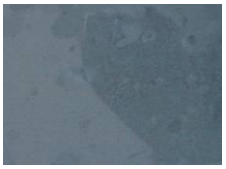
High adhesive special binding agents are used to endure any impact or bending stress.

Adhesive strength test (ASTM D 3359-90)	
	Classification : 5 B

Superior rust protection

ZINCOT N-50 uses micro-particle high purity zinc dust for the product, based on the room-temperature zinc coating method, to provide permanent rust protection due to the electrochemical reaction between zinc and the metal.

Item		Not process	N-50 coating
Salt water spray test (KS D 9502) (5%NaCl, 35℃, 120hr)	Before		

	After		
		Rating No. : 0	Rating No.: 10

Superior heat- and chemical-resistance

Uses

Vessel; Bottom, ventilation duct, heat exchanger, water tank, drain pump, marine facilities of vessels.

Bridge; Rust proofing of pier, wire rope, foot, bolt, nut and welded part.

Vehicles; Muffler,body,underbody,fuel tank inlet, welded area of heavy equipment, parking facilities.

Generation and electric system; Transmission tower, broadcasting facility, antenna, steel tower, street light.

Construction; Pipes installed underground, elbow, steel structure, fence.

Others

- Pipeline of refinery plant
- Piping and opening tank of freezer and air-conditioned manufacturer
- Rust proofing of machinery and equipment of chemical plant
- Outdoor steel structures
- Agricultural equipment and snowplow
- Welded portion of guardrails in expressway
- Rust proofing of water discharge channel system of irrigation channel




Cautions

Do not spray directly onto the face or food. Do not inhale or intake.

Keep it out of the reach of children.

As this is an inflammable product using high pressure gas, keep the following cautions carefully.

1. Do not spray directly toward open flame.
2. Do not use it near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
3. Do not use it in an environment where there are explosive or inflammable materials.
4. Store the product in places where the temperature does not exceed 40℃.
5. After used in enclosed areas, be sure to ventilate.
6. Do not throw into a fire.
7. After use, throw it away after checking and removal the remaining gas in the container.
8. Do not store it in enclosed area.
9. Below 5℃, injection power may be poor.

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Technical data sheet(Aerosol type)

Item	Result	Remark
After dry content of zinc	Above 80%	-
Purity of zinc	Above 99%	-
Specific gravity	1.40±0.05	@20℃
Viscosity	above 10 sec.	@20℃, Ford cup #4
Set to touch	5~30 min.	@20℃, humidity 70%
Full hardness	7days	@20℃, humidity 70%
Term of storage	1 year	Room temp.
Possible painting area(Loss 10%)	5.58 m^2/ℓ	Thickness 20 ㎛

Properties of drying film

Item	Result	Remark
Impact test(300g×50cm)	No defects	Thickness 20 ㎛
Flexibility(10mm ø, 180° curving)	No defects	Thickness 20 ㎛
Erichsen test(6mm)	No defects	Thickness 20 ㎛
Salt water immersion test(Above 360 hrs.)	No defects	Thickness 270~300 ㎛, 5% solution
Salt water spray test(Above 360 hrs.)	No defects	Thickness 270~300 ㎛, 5% solution
Fresh water immersion test(Above 360 hrs.)	No defects	Thickness 270~300 ㎛

※ This information can be amended without any notice according to new knowledge and test result. If there are any questions, please contact us or the store where you purchased it.

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