



ZAK-M22 Vapor Capsule

Technical Data Sheet

ZERUST®/EXCOR® ZAK-M22 Vapor Capsule is a portable capsule containing proven ZERUST® Vapor Corrosion Inhibitor (VCI) technology, used to protect metals in hard-to-reach areas of control panels, electrical cabinets, or any other enclosed spaces from corrosion. They even protect when items are in operation or may be used as a supplement to other ZERUST® VCI packaging products for added protection. ZAK-M22 Vapor Capsules are quick and easy to install. Simply peel back the protective paper from the adhesive tape and install it securely in the desired location. Next, tightly seal the enclosure to trap protective vapor inside. Additionally, each capsule has a unique serial number and QR code printed on the label. This feature, used along with the ZERUST® ZAP App, allows the user to be notified of the initial installation location and replacement schedule. Visit www.zerust.com/resources/apps for more information or to download the App.

ZERUST® ZAK-M22 Vapor Capsule diffuses invisible, odorless, and non-toxic ZERUST® VCI molecules that quickly settle onto exposed metal surfaces inside the packaging or enclosure and effectively neutralize contaminants. Upon removal from the packaging or enclosure, the VCI will dissipate from the metal surfaces, allowing immediate painting, welding, or further processing. ZAK-M22 Vapor Capsule protects multiple metal types from rust and tarnish for up to 2 years[†], depending on the environment (See Protection Info on page 2 for specific protection capabilities) in a sealed enclosure.

For over 50 years, ZERUST® VCI technology has proven its performance and safety with thousands of customers worldwide. It is used to protect valuable metal items for manufacturers in industries such as automotive, agricultural, aerospace, and mining. ZERUST®/EXCOR® offers on-site support and service in more than 70 countries via a network of 21 joint venture partnerships. Check with your ZERUST®/EXCOR® representative for a comprehensive corrosion management solution that is most effective for your metal assets.

Typical Properties

Appearance	PE-plastic capsule containing active pellets.
Substrates*	Multimetal protection. Do not overload the system.
Vapor Inhibiting Ability (VIA)	Pass (NACE TM0208)

* When applied in spaces with a volume of less than 17.5 ft³ (0.5 m³), test before use to ensure compatibility with copper and bronze metals.

This data sheet provides general guidelines for operation, application, and removal. Please contact your ZERUST®/EXCOR® account representative for more specific recommendations on your particular operation and conditions.

Operating Summary

- Remove the product from the packaging.
- Using the ZERUST® ZAP App, scan the unique QR code printed on the ZAK-M22 Vapor Capsule label.
- Place the ZAK-M22 Vapor Capsule in the most ideal location possible following the principles below:
 - When applied in spaces with a volume < 17.5 ft³ (0.5 m³), test before use to ensure compatibility with copper and bronze.
 - Center: The ideal location to obtain maximum coverage of protection from the capsule. This position may not be possible if the center is occupied.
 - Corner: In deeper enclosures, two capsules may be required on diagonally opposed corners to fully protect the entire space.
 - Sides: This is practical for most applications and provides the optimum side-mounted protection.
 - Dual Placement: For longer boxes or divided spaces, place a capsule in opposite corners for complete coverage.
 - **For enclosures containing both ferrous (steel, iron, cast) and non-ferrous (aluminum, zinc, copper, brass, etc.) metals, use no more than prescribed (See Protection Info on page 2). For enclosures containing only ferrous metals, add more capsules for better corrosion protection in aggressive environments.**
- Ensure that the airflow to the enclosure is restricted. It is essential to restrict airflow to the container, as airflow removes the protective vapor barrier from the space faster than it can be released from the ZAK-M22 Vapor Capsule.
 - When applying a ZAK-M22 Vapor Capsule within an enclosure where the air is replaced regularly, such as air-cooling systems for computer equipment, it is recommended to place the capsule close to the source of airflow and replace it more frequently. For added corrosion protection, consider placing an additional ZAK-M22 Vapor Capsule near the sensitive metal surface to be protected.
- Upon removal of the ZAK-M22 Vapor Capsule or opening the enclosure, the ZERUST® protective molecules will dissipate from the metal surface in a few hours. Corrosion protection of the metal surface will also cease by this time.
 - When removing or replacing the capsule, insert a flat scraping object between the tape and surface to cleanly remove.



product information and photos

Availability

ZERUST®/EXCOR® ZAK-M22 Vapor Capsules are in stock for immediate delivery and sold in cases. Contact your ZERUST®/EXCOR® representative for ordering information.

Part Number	Quantity
375-M-00202	10/Case

Protection Info‡

Model	Product Dimensions* L x W x H	Normal Environment**			Aggressive Environment**		
		Protection Volume (Up to)‡	Protection Radius (Up to)‡	Protection Duration (Up to)‡	Protection Volume (Up to)‡	Protection Radius (Up to)‡	Protection Duration (Up to)‡
ZAK-M22	3 7/8" x 2 1/8" x 1/2"	35 ft ³ (1 m ³)‡	2 ft (60 cm)‡	2 years‡ in tightly sealed enclosure	3.5 ft ³ (0.1 m ³)‡	0.2 ft (6 cm)‡	1 month‡ in tightly sealed enclosure

*Dimensions are +/- 10%

**Normal environment (below 0.2 ppm SO₂) defined as warehouses, light industrial areas, and shipping and storage in sealed packaging or enclosures. An aggressive environment (at or above 0.2 ppm SO₂) is defined as areas located in the vicinity of salts and acid gases, such as oceans, petrochemical sites, wastewater treatment, and pulp-paper plants or in enclosures that are not well sealed.

Note: For enclosures containing both ferrous (steel, iron, cast) and non-ferrous (aluminum, zinc, copper, brass, etc.) metals, use no more than prescribed. For enclosures containing only ferrous metals, add more capsules for better corrosion protection in aggressive environments.

Storage

- Store in a cool, dry place and away from sunlight in the original packaging.
- Optimal storage temperature is < 85°F (29°C) and 50% RH for up to 2 years from the date of shipment.

Disposal

- The contents of ZAK-M22 Vapor Capsules do not meet the criteria for hazardous waste according to 40 CFR 261 (no components listed on F, K, P, or U lists; not ignitable, not corrosive, not reactive, and not toxic).
- ZAK-M22 Vapor Capsules may be disposed of in the general solid waste trash.
- Since regulations vary by location, ZERUST® advises our customers to review local regulations to ensure proper disposal.

Precautions

- Do not install the capsule where it will be submerged in water.
- Avoid placing metal surfaces in direct contact with wood or cardboard (sources of moisture and acid).
- Do not disassemble. Keep away from children. Safe for people. This product does not pose a health hazard to users due to its classification as an article according to UN GHS, US OSHA HazCom, and CA WHMIS regulations. Check REACH SDS for classification in EU.
- Refer to the Safety Data Sheet (SDS) for more safety information.

‡ DECLARATION

Corrosion protection claims are based on Northern Technologies International Corporation (NTIC) internal laboratory testing performed under controlled parameters on contaminate-free substrates. Real-world application corrosion protection duration on different substrates will vary and depends on factors such as, but not limited to, the application or use, environmental / storage conditions, surface cleanliness, type of substrates, and coating thickness (where applicable). The use of the term "Up to" in reference to time is defined as any time duration from zero up to a specified time frame, but in no event beyond the specified time frame. The use of the term "for years" is based on NTIC's experience with its products but is in no way guaranteed. The use of the term "Up to" in reference to volume is defined as any volume from zero up to a specified volume but in no event beyond the specified volume of protection. It is the customer's / user's obligation to evaluate product performance, corrosion protection duration, safety, and suitability for intended use within the scope advised in the data sheet and to comply with all applicable laws and regulations. **LIMITED WARRANTY/DISCLAIMER** Warranty is limited to the replacement of a product that fails to meet specifications. For full warranty and disclaimer information, visit www.zerust.com/warranty.

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