



ZERUST® Vapor Capsule ZAK-M22

ZERUST®/EXCOR® Vapor Capsule ZAK-M22 diffusers emit Vapor Corrosion Inhibitors (VCI) that protect against the causes of corrosion. The capsules provide targeted corrosion protection in hard-to-reach spaces and work synergistically with other ZERUST® products. Its VCI chemistry works quickly and is effective at neutralizing contaminants. Use to protect electronics, electrical components, and inside enclosures such as musical instrument cases and gun cases.

Each capsule has a QR code printed on the label to facilitate scheduling its replacement schedule.

▶ Benefits

Fast-acting VCI protection

Unique QR code printed on the label to facilitate scheduling its replacement schedule.

Multimetal protection that neutralizes contaminants

Does not affect the circuit boards or sensitive components*

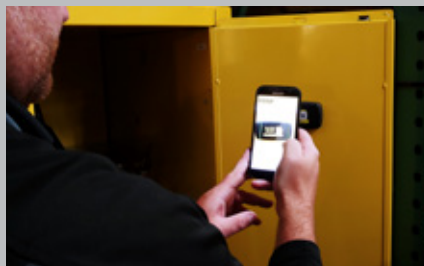
Suitable for new equipment and to protect the reliability of existing equipment

Application Examples

A Vapor Capsule protects an electronics enclosure from corrosion during operation.



Each capsule has a unique QR code printed on the label to facilitate scheduling its replacement schedule.



Application Types

Storage
Shipping
During Operation
May be used with ZERUST® Packaging

* 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.

Product Information

Description	ZERUST®/EXCOR® ZAK-M22 Vapor Capsules are VCI (Vapor Corrosion Inhibitor) diffusers.
Protected Metal Types	Multimetal protection for steel, iron, zinc, and galvanized steel, copper, brass, bronze, aluminum (and alloys), nickel, tin, silver, and solder. Do not overload the system†
Passed Corrosion Inhibition Tests	DIN 60060-2-30 (Humidity Chamber) NACE TM0208 - Vapor Inhibiting Ability (VIA) DIN 50018 (Kesternich chamber SO ₂ test)
Storage	Store in a cool, dry place and away from sunlight for up to 2 years from the date of shipment.

† 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.

Protection Capabilities*

ZERUST® Product Name	Normal Environment** (below 0.2 ppm SO ₂)			Aggressive Environment** (at or above 0.2 ppm SO ₂)		
	Volume of Protection (Up To)	Radius of Protection (Up To)	Duration of Protection (Up To)	Volume of Protection (Up To)	Radius of Protection (Up To)	Duration of Protection (Up To)
ZAK-M22	35 ft ³ (1 m ³)	2 ft (60 cm)	2 years in tightly sealed enclosure	3.5 ft ³ (.1 m ³)	.2 ft (6 cm)	1 month in tightly sealed enclosure

Operating temperature: Up to 131°F (55°C)

Operating temp max adhesion of tape is 165°F (73°C)

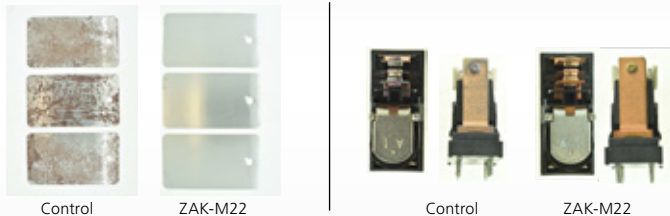
* Protection ratings are based on the highest average tested protection properties and are not guaranteed. Results may vary according to usage environment and metal surface properties such as contaminants.

**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 enclosure containing only ferrous metals, add more capsules for better corrosion protection in aggressive environments.

Sample of Lab Test Results

ZAK-M22 showed protection against limited HCl, SO₂, and H₂S in the environment and chloride contaminants at different levels on the surface of metals. (Test conditions and results available upon request).



Control

ZAK-M22

Results at 70 ppm* of chloride

*ppm of chloride concentration sprayed on panels

Control

ZAK-M22

Results at 37 ppm H₂S

Volume of protection: 0.134 ft³ (0.0038 m³)

DECLARATION

This Data sheet and information it contains is considered to be accurate at the date of printing. No representation or warranty, expressed or implied is made as to the accuracy or completeness of the data and information contained in this publication. It is the User's obligation to evaluate and use products safely and within the scope advised in the data sheet and to comply with all applicable laws and regulations.

LIMITED WARRANTY

All statements, technical information and recommendations contained herein are based on validations and tests conducted by Northern Technologies International Corporation/ZERUST® or its partners and are believed to be reliable, but the accuracy or completeness thereof is not guaranteed. We warrant our products will be free from defects when shipped to customer. Our obligation under this warranty shall be limited to replacement of product that proves to be defective. To obtain replacement product under this warranty, the customer must notify Northern Technologies International Corporation/ZERUST® or its partners or agent of the claimed defect within 3 months after shipment of product to customer. Customer shall pay all freight charges for replacement products. We shall have no liability for any injury, loss or damage arising out of the use of or the inability to use the products. And any financial claims shall be limited to the value of the products sold.

Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. No representation or recommendation not contained herein shall have any force or effect unless in a written document signed by an officer of the company. The foregoing warranty is exclusive and in lieu of all other warranties, express, implied or statutory, including without limitation any implied warranty of merchantability or of fitness for a particular purpose. In no case shall Northern Technologies International Corporation/ZERUST® be liable for incidental or consequential damages.

For full warranty and disclaimer information visit, www.zerust.com/warranty.

©2013-2023 Northern Technologies International Corporation (NTIC). All Rights Reserved. NTIC is the owner of the following trademarks: ActivPak®, Cor Tab®, EXCOR®, Flange Saver®, ICT®, NaturVCI®, NIT®, Plastabs®, Z-CIS®, Zeion®, ZERUST®, 浩乐特, Z-PAK® and the Color "Yellow". ABRIGO®, UNICO®, and VALENO® are registered trademarks of EXCOR GmbH, a Joint Venture Partner of NTIC.

Availability

ZERUST® ZAK-M22 Vapor Capsules are in stock for immediate delivery. Sold in cases. Made in the USA.

Part Number	Quantity
375-M-00202	10/Case

Removal

When removing or replacing the capsule, insert a flat scraping object between the tape and surface to cleanly remove.



Safety

- 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.
- ZERUST® VCI chemistry is safe for sensitive electronics. No galvanic effects, residues, or changes in the properties of metals. The protective molecules dissipate upon opening the enclosure.
- All substances in ZERUST® ZAK-M22 Vapor Capsule are listed by the US Food & Drug Administration (FDA) as Generally Recognized As Safe (GRAS), have an FCN, or are approved as Indirect Food Additives when prescribed conditions are met (21 CFR 172.863, 175.105, 177.1010, 177.1350, 178.2010, 178.3910, 182.3089, 184.1431, 187.3570).

A product of:
Northern Technologies
International Corp
4201 Woodland Road
Circle Pines, MN 55014
USA

Phone: +1 763.225.6600
Fax: +1 763.225.6645
sales@zerust.com
www.zerust.com

