

## Zeomic® AJ Technical Bulletin No. 1

### TECHNICAL BULLETIN FOR ZEOMIC TYPE AJ SILVER ZEOLITE POLYMERIC COATING FOR HEATING, VENTILATION AND AIR CONDITIONING APPLICATIONS

**Read the product label first.** Refer to the product label and MSDS for complete directions on safety precautions, storage and handling.

#### Product Description:

Zeomic® Type AJ Silver Zeolite (Zeomic) contains 2.5% by weight silver in a natural zeolite carrier. Zeomic is registered by the U.S. Environmental Protection Agency for use in plastics, fibers, coatings, films, laminates, adhesives and sealants. In coatings applied to Heating, Ventilation and Air Conditioning (HVAC) systems and components thereof, the antimicrobial additive is incorporated into a coating to preserve, keep odor-free and operational the components of the HVAC system. The active ingredient provides long-term residual activity and lasting protection against ~~odor, discoloration, staining, deterioration or corrosion caused by~~ bacteria, mold and mildew. This product is compatible with the substrates and products listed under "Approved Uses."

#### Features:

Good durability – Zeomic imparts a durable antimicrobial activity to the surface of a wide variety of substrates; it is leach resistant and non-migrating. Salt spray, water soak and humidity testing has indicated that the antimicrobial benefit will be present as long as the coating or treatment remains on the substrate.

Antimicrobial activity – Effective against ~~odor, discoloration, staining, deterioration or corrosion caused by~~ bacteria, mold, mildew, fungi, algae and yeasts; antimicrobial action is exhibited on contact and in the presence of moisture.

#### Claims:

- Zeomic preserves treated articles.
- Zeomic is an EPA registered antimicrobial agent that will effectively prevent the growth and spread of mold, mildew, fungus and bacteria ~~that cause odor, discoloration, staining, deterioration or corrosion on the surface of a treated article.~~
- Zeomic prevents ~~odor, discoloration, staining, deterioration or corrosion caused by~~ bacteria, fungi, mold and mildew.
- Zeomic provides long-lasting protection from ~~odor, discoloration, staining, deterioration or corrosion caused by~~ bacteria, fungi, mold and mildew.
- Zeomic controls bacteria, mold and mildew, which cause corrosion.

ACCEPTED  
with COMMENTS  
in EPA Letter Dated:

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EPA Registration No. 71227-1  
EPA Establishment No. 71227-JP-001  
REDLINE Last Revision (3) dated 2/15/01

Under the Federal Insecticide,  
Fungicide, and Rodenticide Act as  
amended, for the pesticide,  
registered under EPA Reg. No.

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**Important:** Zeomic does not protect building occupants from airborne disease-causing bacteria, viruses, mold or mildew or airborne allergens. Always clean and maintain the heating, ventilation and air conditioning system in accordance with the manufacturer's directions.

**Technical Data:**

Active Ingredient: 2.5% Silver  
Color: White  
Physical State: Dry Powder  
Flammability: Not Flammable  
Specific Gravity: 2.15 ± 0.1 g/cm<sup>3</sup>  
pH: 7-9 (1g Zeomic/100 ml water)  
Thermal Stability: 800 °C

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**Approved Uses:**

For use in polymeric coatings and adhesives, including aqueous, aqueous/solvent solutions, protectorant wax or silicone technology to treat –

- Heating, Ventilation and Air Conditioning systems and related materials (including insulation, air handlers, ducts, heat exchangers, drain pans and liners thereof, air filters, air purifiers, diffusers, humidifiers and parts and components thereof),
- Automobile air conditioning systems.

**How to Use Zeomic-Surface Preparation:**

**Metal Surfaces:** Apply only to clean dry surfaces free of all dirt, grease or impurities. Abrade all surfaces to remove all surface rust and corrosion products, and wash the intended surface with the appropriate cleaner, rinse and allow to dry thoroughly. Use surface pretreatments or primer coatings as required.

**Painted Surfaces:** Apply only to clean dry surfaces free of all dirt, grease or impurities. Wire brush painted surfaces removing all flaking, loose or chalking material. Sand all glossy surfaces to roughen the entire area. Use surface pretreatments or primer coatings as required.

**Mixing:**

Incorporate Zeomic directly into formulations developed for the coating of heating, ventilation and air conditioning system applications. Maintain constant agitation of the coating during the application process.

**Application:**

Following the surface preparation steps, various coating technologies may be used to apply the Zeomic compound, including automated dip, flow, roll or electro-deposition coating and manual brush, roller or spray coating.

Automated Processes:

Circulate Zeomic and coating via a closed system maintaining agitation. Ensure excess coating applied via dip, flow or roll coating technologies is collected and returned to the system. Maintain constant solids concentration by the addition of fresh, properly mixed coating to make up for usage. Minimize evaporation of the coating by maintaining covers on storage vessels. Utilize appropriate drying conditions, including infrared or conventional ovens to properly cure coating incorporating the Zeomic compound. These processes must be conducted in accordance with federal, state and local air pollution laws and regulations.

Apply coating to all surfaces at a rate to achieve a dry film thickness of approximately five (5) to twenty five (25) microns.

See handling instructions below for operator exposure requirements.

Manual Processes:

Zeomic may be incorporated into polymer adhesives and coatings and applied manually by brush, roller, spray or other coating technology. These products may be easily applied by high volume low-pressure (HVLP) spray equipment commonly used throughout the industry. These processes must be conducted within a downdraft spray booth permitted and operating in accordance with federal, state and local air pollution laws and regulations.

Apply coating to all surfaces at a rate to achieve a dry film thickness of approximately five (5) to twenty five (25) microns.

See handling instructions below for operator exposure requirements.

**Contact Sinanen Zeomic Co., LTD to confirm optimum application technology and drying conditions, such as time and temperature, for each application before use in a commercial process.**

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**Clean up:**

Use fresh water or solvent to clean brushes and equipment before product dries.

**Handling Instructions:**

Wear goggles or face shield and rubber gloves when handling the dry powder.

Airborne Exposure Limits pursuant to OSHA 1910.1000 Table Z-3 for Mineral Dust:

<u>Permissible Exposure Limit (PEL)</u>	
Respirable fraction:	5 mg/m <sup>3</sup>
Total dust:	15 mg/m <sup>3</sup>

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As with any fine powder, avoid generating dust.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is preferred to help control the emissions of the contaminant at the source, preventing its dispersion through the work area.

**Personal Respirators (NIOSH Approved):**

If the exposure limit is exceeded, a half-face respirator with filter appropriate for 1-micron dust may be worn per appropriate guidelines.

**Storage, Shelf Life and Disposal:**

Do not contaminate water, food or feed by storage and disposal.

**Pesticide Storage:** Do not store in areas accessible to children. Keep containers covered during storage; store below 130°F.

**Shelf Life:** Zeomic has a minimum shelf life of 12 months from date of shipment.

**Container Disposal: Inner Plastic Bag:** Completely empty plastic bag into application equipment. Then dispose of empty bag in a sanitary landfill or by incineration, or, if allowed by State and local authorities, by burning. If burned, stay out of smoke. **Outer Steel Can:** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities.

**Pesticide Disposal:** Wastes from the use of this product may be disposed of on site or at an approved waste disposal facility.

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### PRECAUTIONARY STATEMENTS

**Hazards to Humans:** Harmful if inhaled or absorbed through skin. Causes moderate eye irritation. Avoid breathing dust. Avoid contact with skin, eyes or clothing. **Wear goggles or face shield and rubber gloves when handling the dry powder.** Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash clothing before reuse.

**First Aid:**

**If on skin:** Wash with plenty of soap and water.

**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. Get medical attention.

**If in eyes:** Flush with plenty of water. Call a physician if irritation persists.

**MSDS Information:**

Refer to the Material Safety Data Sheet for this product for complete handling and safety information.

**Transportation Information:**

Zeomic is not regulated as a hazardous material under DOT.

**Regulatory Information:**

Zeomic is registered by the U.S. Environmental Protection Agency as EPA Reg. No. 71227-1.

**For technical assistance or questions contact:**

Sinanen Zeomic Co., LTD.  
4-22, Kaigan 1-Chome, Minato-ku  
Tokyo 105-8525, Japan

Questions? 011-81-3-5470-7125

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**Important: Warranty and Disclaimer Information**

Sinanen Zeomic Co., LTD warrants that each of its products will be manufactured in accordance with Sinanen's specifications in effect on the date of manufacture. **SINANEN MAKES NO OTHER WARRANTIES AND EXPRESSLY DISCLAIMS ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.** If a product fails to meet this limited warranty purchaser's sole and exclusive remedy is replacement of the product or, at Sinanen's option, refund of the purchase price. **SINANEN'S ACCEPTANCE OF ANY ORDERS FOR THIS PRODUCT IS EXPRESSLY CONDITIONAL UPON PURCHASERS' ASSENT TO THE TERMS ON THE APPLICABLE INVOICE.**