

**ENSINGER INC  
DIVISION OF ENSINGER INC.**

365 MEADOWLANDS BLVD  
WASHINGTON, PA 15301  
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GRENLOCH, NJ 08032  
856-227-0500

<b>Section 1. Chemical, Product and Company Identification</b>	
TECAFORM™ Acetal Stock Shapes	
EMERGENCY TELEPHONE 856-227-0500 / 724-746-6050	
ISSUE DATE : March 25, 2009	
TRADENAME: TECAFORM™AI ID	
PART NAME: TECAFORM® ACETAL COPOLYMER – Metal Detectable Gray	
<b>Section 2. Composition/Information on Ingredients</b>	
Chemical Name	CAS #
Acetal Copolymer with stainless steel powder	24969-26-4
Formaldehyde	50-00-0
	Trace level contaminant
<p>This is a polymeric material. Any hazardous constituents are wetted by the polymer system, and therefore, present no likelihood of exposure under normal conditions of processing and handling. This product may contain proprietary ingredients. This material is considered hazardous under OSHA Regulations due to the release, if overheated, of formaldehyde, an OSHA regulated material.</p>	
<b>Section 3. Hazards Identification</b>	
<p><b>Emergency Overview:</b> Pellets or powder with slight to no odor. Combustion and decomposition may produce hazardous fumes. Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of severe. Molten material can cause thermal burns on contact with skin or eyes. Spilled pellets may create a slipping hazard. Overheating may result in release of formaldehyde, which may irritate the eyes and respiratory tract.</p> <p><b>Potential Health Effects:</b></p> <p><b>Routes of Exposure:</b> Skin and eye contact; inhalation of vapors, if overheated.</p> <p><b>Signs and Symptoms of Exposure:</b></p> <p>No specific information available concerning exposure to the product. If formaldehyde is released as an off-gas, a burning sensation and tearing of the eyes may occur. An irritating odor may be noted.</p> <p><b>Skin:</b> Hot or molten material has the potential to cause thermal burns. Polymer particles can cause mechanical irritation. Formaldehyde, which may be generated if overheated, may cause skin sensitization, an allergic reaction, which becomes evident on re-exposure.</p> <p><b>Eyes:</b> No specific information available on the product. Polymer particles can cause mechanical irritation. Degradation vapors may cause irritation.</p> <p><b>Inhalation:</b> No specific information available on the product. Pellets are not considered an inhalation hazard; polymer dust/flake may be considered an inert nuisance particulate. Formaldehyde, which may be released if overheated, may cause irritation of the upper respiratory tract.</p> <p><b>Ingestion:</b> No specific information available on the product, however, low toxicity by this route is expected based on the biological activity of high molecular weight polyacetal polymers.</p> <p><b>Long Term/Delayed Effects:</b> No specific information available on the product. Formaldehyde may cause respiratory sensitization. No specific information available on the product. Formaldehyde, which is a degradation product, is listed as a potential cancer hazard by OSHA, a known human carcinogen by The International Agency for Research on Cancer (IARC, Group 1), and a substance which can reasonably be anticipated to be a carcinogen by The National Testing Program (NTP). Formaldehyde should not pose a risk if exposures are kept below the OSHA Permissible Exposure Limit.</p> <p><b>Medical Conditions</b></p> <p><b>Aggravated by Exposure:</b></p> <p>No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratory system.</p> <p><b>Carcinogenicity:</b></p>	

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***Section 4. First Aid Measures***

**Skin:** If hot or molten polymer or hot vapors contact skin, cool rapidly with cold water. If polymer is stuck to skin, do not remove. Seek medical attention. Allow adhered polymer to come off naturally. Removal of adhered polymer may result in more tissue damage than if polymer is allowed to come off over time.

**Eyes:** Flush with plenty of water. Seek medical attention if discomfort persists, and to remove foreign body.

**Inhalation:** Remove to fresh air. Seek medical attention if breathing difficulties occur.

**Ingestion:** If a significant quantity has been swallowed, give two glasses of water to dilute. Seek medical attention.

**Note to Physicians:** This product is essentially inert and nontoxic. However, if it is overheated or burns, gases such as carbon monoxide and formaldehyde may be released. Those exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal and the exposure occurred in an enclosed space, asphyxia (carbon dioxide replacing oxygen) is a possibility. Formaldehyde is a respiratory irritant gas. If patients may have inhaled high concentrations of irritating fumes they should be monitored for delayed onset pulmonary edema.

***Section 5. Fire Fighting Measures***

**Flashpoint:** > 93 deg C (>200 deg F) by Tag Closed Cup Method.

Base resin dust/powder has a US Bureau of Mines relative dust explosion hazard rating of severe.

**Hazardous Products of Combustion:**

Carbon monoxide and carbon dioxide.

**Extinguishing Media:** Water spray, foam, carbon dioxide, or dry chemical.

**Firefighting Instructions:** Firefighters should wear self-contained breathing apparatus and full fire-fighting turn-out gear (bunker gear). Keep personnel removed from and upwind of fire. Water should be used to keep fire-exposed containers cool. Product burns with a very hot, but very faint blue flame. Water, foam and dry chemical may cause damage to electrical equipment.

***Section 6. Accidental Release Measures***

\*For more information, see regulatory section 15.

**Procedures in Case of Spill or Leak:**

Sweep or gather up spills and place in proper container for recovery or disposal.

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**Section 7. Handling and Storage**

**Handling:** Do not handle hot or molten material without appropriate protective equipment. Maintain good housekeeping in work areas. Do not exceed recommended process temperatures to minimize release of decomposition products. Do not smoke in areas where polymer dust is present. Appropriate measures should be taken to control the generation and accumulation of dust during conveying and processing operations.

**Storage:** Store in a cool dry place. Maintain dryness of resin.

**Engineering Controls:** Local Exhaust: Recommended when appropriate to control employee exposure to dust or process vapors.

General: May not be adequate as the sole means to control employee exposure.

**Skin:** When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and face shield when there is a chance of contact.

**Eyes:** Safety eyewear recommended.

**Inhalation:** A NIOSH approved respirator is recommended if there is a possibility of dust generation above permissible exposure limits or that decomposition vapors may be generated.

**Exposure Guidelines:** Operations involving grinding and machining of parts should be reviewed to assure that particulate levels are kept below recommended standards. Formaldehyde is a hazardous degradation product. Trioxane is a residual monomer. See the exposure limits below.

**Protective Equipment:**

**Section 8. Exposure Controls/Personal Protection**

<b>Ingredient:</b>	<b>Agency:</b>	<b>Value:</b>
Formaldehyde	OSHA PEL ACGIH TLV	TWA: 0.75 ppm ; 2 ppm STEL 0.3 ppm ceiling
Nuisance/inert dust	OSHA PEL	TWA: 15 mg/cu m (total) 5 mg/cu m (respirable)
Nuisance particulates	ACGIH TLV	TWA: 10 mg/cu m (total) 3 mg/cu m (respirable)
Trioxane	Ticona WEL	8 and 12 hr. TWA: 3.5 ppm

Ticona has decided not to adopt the ACGIH TLV for formaldehyde based on a scientific evaluation of all the available data. Ticona has decided to adopt the OSHA Standard. Ticona WEL is the Ticona Workplace Exposure Limit.

**Section 9. Physical and Chemical Properties**

**Appearance:** solid rod, plate, tube  
**Odor:** Slight characteristic odor  
**Physical State:** Solid  
**Vapor Pressure:** < 0.001 mm Hg  
**Solubility:** Negligible < 0.1% (in water)  
**Specific Gravity:** 1.4 - 1.8  
**Melting Point:** 165.0 deg C (329.0 deg F)  
**Percent Volatiles:** < 1.0 by weight

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**Section 10. Stability and Reactivity**

**Chemical Stability:** Stable under ordinary conditions of use and storage.  
**Conditions to Avoid:** Flame; do not allow mixing of this material with PVC, other halogen-containing materials, and partially and/or fully crosslinkable thermoplastic elastomers. Do not heat above 460 deg F (238 deg C). Avoid prolonged heating at or above the recommended processing temperature.  
**Incompatibility:** Strong acids and oxidizing agents. Do not compound with PVC or other halogen containing polymers or partially and/or fully crosslinkable thermoplastic elastomers (to avoid acid formation).  
**Hazardous Decomposition Products:** Trioxane, formaldehyde, paraformaldehyde, and formic acid.  
**Hazardous Polymerization:** Will not occur.

**Section 11. Toxicological Information**

No specific information available on the product

**Section 12 Ecological Information**

**Ecotoxicity:** The effects of resin pellets on the wildlife that may ingest them is not well understood. In the case of seabirds, some marine biologists believe that the fowl may not be able to pass plastic pellets through their digestive tracts. Thus, large quantities of ingested pellets may cause intestinal blockage, false feelings of satiation or reduction in absorption of nutrients, causing malnutrition and starvation. The goal of SPI's Operation Clean Sweep is zero loss of pellets into the environment.  
**Environmental Fate/Information:** This material is considered to be non-biodegradable.

**Section 13. Disposal Considerations**

**Disposal:** Recycling is encouraged. Incinerate or landfill in accordance with federal, state, and local regulations. Incinerator must be approved for sulfur containing wastes. This product as shipped is not a RCRA hazardous waste under present EPA regulations.

**Section 14. Transport Information**

Not regulated under US Department of Transportation, IMDG, or IATA  
**Hazard Ratings: Agency Health Flammability Physical Hazard Other**

**Section 15. Regulatory Information**

**TSCA:** All ingredients are listed in the TSCA Inventory or are compliant with the TSCA Polymer Exemption Rule. This product contains traces of para-dichlorobenzene, which is a TSCA 12b chemical. TSCA 12b requires notifying EPA prior to export.  
**SARA:** This product does not contain any toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-to-Know Act of 1986 and of 40 CFR 372.

**Section 16. Other Information**

Agency	Health	Flammability	Reactivity	Other
NFPA	1	1	0	
HMIS	1	1	0	

**Disclaimer:** This product is not intended for use in medical or dental implants.

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