

Material Safety Data Sheet

Ticona

Page 1 of 6

Product Name: HOSTAFORM C 9021 TF, , NATURAL
Product Code: 50006230
MSDS Number: CN3000
Revision Number: 7
Version Date: 12/26/2006

Section 1. Chemical, Product and Company Identification

Product Name: HOSTAFORM C 9021 TF, , NATURAL

Product Code: 50006230

MSDS Number: CN3000

Synonyms: POLYOXYMETHYLENE COPOLYMER
ACETAL COPOLYMER

Responsible Party: TICONA
8040 DIXIE HWY.
FLORENCE, KY 41042
UNITED STATES
<http://www.ticona.com>

Product Use: Engineering thermoplastic.

MSDS Prepared By: O. Schnellenberger (phone 859-372-3186)

Section 2. Composition/Information on Ingredients

Ingredients:	Ingredient	CAS Number	
	Base Resin	24969-26-4	
	Formaldehyde	50-00-0	Trace level contaminant

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.

Section 3. Hazards Identification

Emergency Overview: 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.

Potential Health Effects:

Routes of Exposure: Skin and eye contact; inhalation of vapors, if overheated.

Signs and Symptoms of Exposure: If formaldehyde is released as an off-gas, a burning sensation and tearing of the eyes may occur. An irritating odor may be noted. Thermal decomposition may evolve fumes, which can cause "polymer fume fever", which has flu-like symptoms.



Transportation Emergency (800)424-9300 CHEMTREC - 24 hrs in USA
(703)527-3887 Outside USA

Product Emergency: (888)522-7816 Ticona - 24 hrs/day, toll free in the USA and Canada.

Product Information: (800)242-8469- toll free in North America



Celanese

Ticona
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Material Safety Data Sheet

Ticona

Page 2 of 6

Product Name: HOSTAFORM C 9021 TF, , NATURAL
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MSDS Number: CN3000
Revision Number: 7
Version Date: 12/26/2006

Immediate Effects:

- Skin:** 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 reexposure.
- Eyes:** No specific information available on the product. Polymer particles can cause mechanical irritation. Degradation vapors may cause irritation.
- Inhalation:** No specific information available on the product. Pellets are not considered an inhalation hazard; polymer particles may be considered an inert nuisance particulate. Thermal decomposition may evolve hazardous fumes which can cause "polymer fume fever", which has flu-like symptoms. Formaldehyde, which may be released if overheated, may cause irritation of the upper respiratory tract.
- Ingestion:** 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.

Long Term/Delayed Effects: No specific information available on the product. Formaldehyde may cause respiratory sensitization.

Carcinogenicity: 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.

Medical Conditions Aggravated by Exposure: 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.

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 so that excessive off-gassing occurs, a condition called polymer fume fever may be seen in individuals exposed to the gases. Polymer fume fever is a flu-like syndrome (aches, chest pain, cough and fever) that clears within one to two days (see Sections 5 and 10 for off-gases). Patients who have been exposed to off-gases may need to have their arterial blood gases and carboxyhemoglobin levels checked. If the carboxyhemoglobin levels are normal

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 **Celanese**
Ticona
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Material Safety Data Sheet

Ticona

Page 3 of 6

Product Name: HOSTAFORM C 9021 TF, , NATURAL
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Version Date: 12/26/2006

and the exposure occurred in an enclosed space, asphyxia (carbon dioxide replacing oxygen) is a possibility. Formaldehyde, fluorinated hydrocarbons, and hydrogen fluoride are all respiratory irritants. If patients may have inhaled high concentrations of irritating fumes, they should be monitored for delayed onset pulmonary edema. The greatest hazard is from respiratory tract irritation; specific antidotes for hydrogen fluoride (HF) are not recommended because HF is not likely to be present in high enough concentration for an antidote to be of use.

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, carbon dioxide, and hydrogen fluoride.

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. Ticona supports SPI's Operation Clean Sweep.

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.

Section 8. Exposure Controls/Personal Protection

Engineering Controls: Local Exhaust: Should be used during processing to control employee exposure to process vapors and dust.
General: May not be adequate as the sole means to control employee exposure.

Protective Equipment:

Skin: When thermal or melt processing, wear long pants, long sleeves, well insulated gloves, and

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 **Celanese**
Ticona
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Material Safety Data Sheet

Ticona

Page 4 of 6

Product Name: HOSTAFORM C 9021 TF, , NATURAL
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Version Date: 12/26/2006

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.

Ingredient:	Agency:	Value:
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: Pellets
Odor: Slight characteristic odor
Physical State: Solid
Vapor Pressure: < 0.001 mm Hg
Melting Point: 165.0 deg C (329.0 deg F)
Solubility: Negligible < 0.1% (in water)
Specific Gravity: 1.4 - 1.8
Percent Volatiles: < 1.0 by weight

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).

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 **Celanese**
Ticona
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Material Safety Data Sheet

Ticona

Page 5 of 6

Product Name: HOSTAFORM C 9021 TF, , NATURAL
Product Code: 50006230
MSDS Number: CN3000
Revision Number: 7
Version Date: 12/26/2006

Hazardous Decomposition Products: Trioxane, formaldehyde, paraformaldehyde, fluorinated hydrocarbons, hydrogen fluoride, 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. Landfill in accordance with federal, state, and local regulations. 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.

Section 15. Regulatory Information

TSCA: All ingredients are listed in the TSCA Inventory or are compliant with the TSCA Polymer Exemption Rule.

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.

Other: For information regarding regulations not listed please contact Ticona Product Stewardship.

Section 16. Other Information

Hazard Ratings:	Agency	Health	Flammability	Physical Hazard	Other
	NFPA	1	1	0	
	HMIS	1	1	0	

Note 1: NFPA and HMIS ratings are as determined by Ticona.

Note 2: Revisions in this version include Sections 3 and 8.



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Material Safety Data Sheet

Ticona

Page 6 of 6

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Revision Number: 7
Version Date: 12/26/2006

Disclaimer:

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

Refer to the appropriate Ticona bulletins for specific processing guidance and good manufacturing practices (purging, processing parameters, shutdown, etc.).

The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Ticona makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.



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