

**HERCULES****MATERIAL SAFETY DATA SHEET**

Hercules Incorporated  
 Pinova Division  
 Hercules Plaza  
 1313 North Market Street  
 Wilmington, DE 19894-0001  
 (302) 594-5000 (24 HRS)

MSDS NO.: 862 3121 0800 VER: 09  
 SAP CODE: 500SW5060A00000058  
 ISSUE DATE: 08/14/2006  
 SUPERSEDES: 862 3121 0800 VER: 08

**1 PRODUCT IDENTIFICATION**

PRODUCT NAME	FORAL® 105 SYNTHETIC RESIN
CHEMICAL/Common Name	pentaerythritol ester of hydrogenated rosin
CAS NUMBER	64365-17-9

**2 COMPOSITION / INFORMATION ON INGREDIENTS**

This product is considered hazardous according to the OSHA Hazard Communication Standard 29CFR1910.1200 due to flammable dust potential.

If this product is heated or used at temperatures sufficient to produce smoke or fumes, refer to MSDS Section 8, Recommended Exposure Limits and Personal Protective Equipment.

**3 HAZARDS IDENTIFICATION****EMERGENCY OVERVIEW**  
WARNING!

Static charges generated by emptying package in or near flammable vapors may cause flash fire.  
 May form flammable dust-air mixtures.

**POTENTIAL HEALTH EFFECTS**

May cause eye irritation by mechanical abrasion.  
 May cause skin irritation by mechanical abrasion.  
 Inhalation may cause respiratory tract irritation.  
 Prolonged or repeated contact may cause skin irritation and may cause skin sensitization in susceptible individuals.  
 Prolonged exposure to smoke or fumes generated by heating this product may cause respiratory irritation with throat discomfort, coughing, or breathing difficulty. Repeated exposure may lead to respiratory sensitization (asthma) in susceptible individuals.  
 Refer to MSDS Section 8, Exposure Controls/Personal Protection, for further information.

Refer to Section 5 for Hazardous Combustion Products, and Section 10 for Hazardous Decomposition/Hazardous Polymerization Products.

**4 FIRST AID MEASURES****SKIN**

Wash thoroughly with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Thoroughly wash clothing before reuse. See Note to Physician.  
 HOT MOLTEN product: Immediately cool skin burns with water and cold packs for at least 15 minutes. Do NOT put ice directly on the skin. Do NOT attempt to remove solidified resin from the skin as severe tissue damage may result. Get immediate medical attention. See Note to Physician.

**EYE**

Remove contact lenses. Hold eyelids apart. Immediately flush eyes with plenty of low-pressure water for at least 15 minutes. Get medical attention if irritation persists.  
 HOT MOLTEN product: Cool burns with plenty of low-pressure water. Get immediate medical attention.

PRODUCT NAME	FORAL® 105	VERSION	09
MSDS NUMBER	862 3121 0800		

1 / 5

MARKETED BY  
**HARWICK STANDARD  
 DISTRIBUTION CORPORATION**  
 60 S. Seiberling Street • Akron, Ohio 44305

**INHALATION**

Remove to fresh air. Get medical attention if nasal, throat or lung irritation develops. See Note to Physician.

**INGESTION**

Not an ingestion hazard under anticipated conditions of use. For accidental ingestion: Do NOT induce vomiting. Get immediate medical attention.

**NOTES TO PHYSICIAN**

This product contains rosin or a rosin derivative. Rosin and some of its derivatives have been reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged skin contact. Smoke or fumes generated by heating product may lead to respiratory sensitization (asthma) in susceptible individuals.

For HOT MOLTEN or HOT LIQUID product: Material should not be forcibly removed from the skin. Mineral oil may be used to loosen and soften the material.

**5 FIRE FIGHTING MEASURES****EXTINGUISHING MEDIA**

Water spray, dry chemical, foam, carbon dioxide or clean extinguishing agents may be used on fires involving this product.

**FIRE FIGHTING PROCEDURES**

Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH approved (or equivalent) and full protective gear when fighting fires involving this product.

**CONDITIONS TO AVOID**

None known.

**HAZARDOUS COMBUSTION PRODUCTS**

If heated to combustion, the following substances may be formed: carbon monoxide, carbon dioxide, aldehydes, carboxylic acids, smoke and formaldehyde

**6 ACCIDENTAL RELEASE MEASURES**

Ventilate area. Avoid dust formation. If product is not contaminated, scoop into clean containers for use. If product is contaminated, scoop into containers, and dispose appropriately. In case of accidental spill or release, refer to Section 8, Personal Protective Equipment and General Hygiene Practices.

**7 HANDLING & STORAGE****GENERAL MEASURES**

Ground all equipment.

Blanket vessel with inert gas when emptying bags where flammable vapors may be present.

Ground operator and pour material slowly into conductive, grounded chute.

For large bags (1000 lbs or greater) a ground cable MUST be attached to the bag ground connection.

Store in a cool, dry, well-ventilated area at approximately 20° C (68° F).

Keep container closed when not in use.

Check old product for deterioration regularly.

Control inventory.

Rotate stock periodically.

For HOT MOLTEN or HOT LIQUID product: Use personal protective equipment as indicated in Section 8: Exposure Controls/Personal Protection.

**MATERIALS OR CONDITIONS TO AVOID**

Avoid conditions that generate dust; product may form flammable dust-air mixtures.

Avoid emptying package in or near flammable vapors; static charges may cause flash fire.

Keep away from heat, flame, sparks and other ignition sources.

---

**PRODUCT NAME**

FORAL® 105

**MSDS NUMBER**

862 3121 0800

**VERSION** 09

2 / 5

Eyewash fountains and safety showers should be easily accessible. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Discharge from the ventilation system should comply with applicable air pollution control regulations.

**GENERAL HYGIENIC PRACTICES**

- Avoid contact with eyes, skin, and clothing.
- Avoid breathing dust or fumes.
- Avoid contamination of food, beverages, or smoking materials.
- Wash thoroughly after handling, and before eating, drinking or smoking.
- Remove contaminated clothing promptly and clean thoroughly before reuse.

**RECOMMENDED EXPOSURE LIMITS**

**PARTICULATES (INSOLUBLE) NOT OTHERWISE SPECIFIED (PNOS):** If used under conditions that generate particulates, the ACGIH TLV-TWA of 3 mg/m<sup>3</sup> respirable fraction (10 mg/m<sup>3</sup> total) should be observed.

**ROSIN PYROLYSIS FUMES:** If this product is heated to temperatures sufficient to produce smoke or fumes, maintain exposure to resin acids to the lowest achievable concentration using recommended engineering controls and personal protective equipment.

**PERSONAL PROTECTIVE EQUIPMENT**

- Safety glasses
  - Impervious gloves
  - Appropriate protective clothing
- Appropriate respiratory protection is required when exposure to airborne contaminants may exceed acceptable limits. Respirators should be selected and used in accordance with OSHA, Subpart I (29 CFR 1910.134) and manufacturers recommendations.
- Personnel exposed to HOT MOLTEN or HOT LIQUID material should wear protective clothing that provides protection against thermal burns. Required Protective Equipment: a) Longsleeved protective shirt, long pants, and work shoes; b) Hard hat and face shield; c) Long-cuff gloves (Gauntlet type-extending beyond the wrist); d) Lined rainsuit with protective hood or shoulder shroud or e) Full aluminized or thermal suit with hood.

**PROTECTIVE MEASURES DURING REPAIR AND MAINTENANCE**

- Eliminate ignition sources and prevent build-up of static electrical charges.
- Completely isolate and thoroughly clean all equipment, piping, or vessels before beginning maintenance or repairs.
- Keep area clean.

**9 PHYSICAL & CHEMICAL PROPERTIES**

<b>PHYSICAL STATE:</b>	solid or flake
<b>COLOR:</b>	pale yellow
<b>ODOR:</b>	typical rosin
<b>Specific Gravity</b>	1.07
<b>Vapor Density</b>	heavier than air
<b>Solubility In Water</b>	negligible at 68° F
<b>Softening Point</b>	203 - 218 ° F Ring & Ball

**10 STABILITY & REACTIVITY**

**HAZARDOUS DECOMPOSITION PRODUCTS**

None anticipated under normal or recommended handling and storage conditions. If this product is used at elevated temperatures, it may generate combustion products. Refer to MSDS Section 5, Hazardous Combustion Products.

**HAZARDOUS POLYMERIZATION**

Not anticipated under normal or recommended handling and storage conditions.

---

<b>PRODUCT NAME</b>	FORAL® 105
<b>MSDS NUMBER</b>	862 3121 0800 <b>VERSION</b> 09



**GENERAL STABILITY CONSIDERATIONS**

Stable under recommended handling and storage conditions.

**INCOMPATIBLE MATERIALS**

None known

**11 TOXICOLOGICAL INFORMATION****CARCINOGENICITY INFORMATION**

Not listed as a carcinogen by NTP. Not regulated as a carcinogen by OSHA. Not evaluated by IARC.

**REPORTED HUMAN EFFECTS**

Due to the physical nature of this material, may cause eye, skin and respiratory irritation. This product contains rosin or a rosin derivative. Rosin and some rosin derivatives have been reported to cause an allergic skin reaction (sensitization) in susceptible individuals after repeated or prolonged contact. Smoke or fumes generated by heating may lead to respiratory sensitization (asthma) in susceptible individuals.

**REPORTED ANIMAL EFFECTS**

Not toxic by OSHA/ANSI criteria based on acute animal peroral testing of this or a similar product (LD50 >500 mg/kg). Feeding studies of this or similar products indicate no evidence of risk at anticipated workplace exposure levels. Mild reversible respiratory irritation from single and repeated inhalation exposure to heated vapors of this or a similar material.

**12 ECOLOGICAL INFORMATION****AQUATIC TOXICITY**

Aquatic 48-hour static LC50 value falls within the relatively harmless range of >1000 mg/L, according to U. S. Fish and Wildlife documentation. As a screening test for chemical pollutants of natural waters, the Bacterial Multiplication Inhibition Test was performed using *Pseudomonas putida*. Due to insolubility of the product, bacteriotoxicity threshold (EC10) of 3363 mg/L was determined on a homogeneous suspension.

**BIODEGRADABILITY**

Based upon data from this or similar materials, this product cannot be regarded as readily biodegradable; however, it may be slowly biodegradable.

**13 DISPOSAL CONSIDERATIONS****WASTE DISPOSAL**

Landfilling in a permitted solid or hazardous waste facility is recommended. Handling, transportation, and disposal of material should be conducted in a manner to prevent a nuisance dust hazard. Fully containerize the material before handling, and protect from exposure to the outdoors. Ensure there are no restrictions on disposing of bulk or semi-bulk quantities of waste material. Disposal should be in accordance with all Federal, State and local regulations.

**14 TRANSPORT INFORMATION****GENERAL**

This product is not subject to DOT regulations. For specific information regarding transportation of this product, please call the Hercules representative at (905) 279-3338.

**15 REGULATORY INFORMATION****FEDERAL REGULATIONS**

FOR USES INVOLVING COSMETIC OR SKIN-CONTACT APPLICATIONS:

Pursuant to U.S. FDA Regulation 21 CFR 740.10:

"WARNING - The safety of this product has not been determined."

**CHEMICAL INVENTORIES**

U.S. TSCA: The components of this product are included on the TSCA Inventory.

Canadian CEPA: Included on DSL Inventory.

**SARA TITLE III - SECTIONS 302/304**

This product is not an Extremely Hazardous Substance subject to reporting under 40CFR355.

---

**PRODUCT NAME**

FORAL® 105

**MSDS NUMBER**

862 3121 0800

**VERSION** 09

4 / 5

**SARA TITLE III - SECTIONS 311 AND 312**

NHH: Not a health hazard

HC-3: Fire hazard

**SARA TITLE III - SECTION 313**

This product does not contain any chemicals subject to reporting under Section 313 of Title III of the Superfund Amendments and Reauthorization Act and 40CFR372.

**CERCLA**

This product does not contain any chemicals subject to reporting as a CERCLA Hazardous Substance under 40CFR302.4.

**RCRA**

This product is not a hazardous waste as listed in 40CFR261.33. It does not exhibit any of the hazardous characteristics listed in 40CFR261, Subpart C.

**16 OTHER INFORMATION****HMIS RATINGS:**

Health	0	Minimal Hazard
Flammability	1	Slight Hazard
Reactivity	0	Minimal Hazard

**LIST OF ACRONYMS**

ACGIH: American Conferences of Governmental Industrial Hygienists

AIHA WEEL: American Industrial Hygienists Association - Workplace Environmental Exposure Level

CASRN: Chemical Abstracts Service Registry Number

CERCLA: Comprehensive Emergency Response, Compensation and Liability Act

HMIS: Hazardous Materials Identification System

IARC: International Agency for Research on Cancer

NTP: National Toxicology Program

OSHA: Occupational Safety and Health Administration

PEL: OSHA Permissible Exposure Limit

RCRA: Resource Conservation and Recovery Act

RQ: Reportable Quantity

SARA: Superfund Amendment Reauthorization Act

STEL: Short-Term Exposure Limit

TLV: Threshold Limit Values (registered trademark of ACGIH)

TPQ: Threshold Planning Quantity

TSCA: Toxic Substance Control Act

TWA: Time Weighted Average

**DISCLAIMER**

The information and recommendations contained in this Material Safety Data Sheet have been compiled from sources believed to be reliable and to represent the most reasonable current opinion on the subject when the MSDS was prepared. No warranty, guaranty or representation is made as to the correctness or sufficiency of the information. The user of this product must decide what safety measures are necessary to safely use this product, either alone or in combination with other products, and determine its environmental regulatory compliance obligations under any applicable federal or state laws.

**MSDS STATUS**

Supersedes Date

10/09/2003

MSDS Revision(s)

Sections 4 and 9 (softening point)

**PRODUCT NAME**

FORAL® 105

**MSDS NUMBER**

862 3121 0800

**VERSION** 09

5 / 5