

HERCULES

MATERIAL SAFETY DATA SHEET

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MSDS NO.: 862 3121 0600 VER: 10
SAP CODE:
500SW5060A00000056
ISSUE DATE: 4/28/00
SUPERSEDES: 862 3121 0600 VER: 09

1 PRODUCT IDENTIFICATION

PRODUCT NAME:

FORAL® 85 SYNTHETIC RESIN

CHEMICAL DESCRIPTION glycerol ester of hydrogenated
rosin
CAS NUMBER 65997-13-9

2 COMPOSITION / INFORMATION ON INGREDIENTS

This product is shipped and delivered as an ambient temperature SOLID or HOT MOLTEN liquid. THE HMIS HEALTH HAZARD RATING IN SECTION 16 IS FOR THE HOT MOLTEN or HOT LIQUID PRODUCT ONLY. The HMIS health hazard rating for the ambient temperature product is 0 minimal.

When shipped at elevated temperatures and delivered in HOT MOLTEN or HOT LIQUID form, refer to MSDS Sections 3, 4, 5, 7, and 8 for additional hazard information.

When shipped and delivered in SOLID form, this product is considered hazardous according to the OSHA Hazard Communication Standard 29CFR1910.1200 due to flammable dust potential.

If this product is used in a manner that could generate particulates (dust), refer to MSDS Section 7, Handling and Storage, and Section 8, Recommended Exposure Limits and Personal Protective Equipment.

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

DANGER!

HOT MOLTEN product.

MARKETED BY

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

Burns may cause irreversible eye injury and blindness.
Causes skin burns.
Inhalation of smoke or fumes may cause throat discomfort,
coughing, or breathing difficulty.
Product may burn if ignited.

WARNING!

SOLID product at ambient temperature: Static charges generated
by emptying package in or near flammable vapors may cause flash
fire.
May form flammable dust-air mixtures.
May cause eye irritation by mechanical abrasion.
May cause skin irritation by mechanical abrasion.
Inhalation of dust may cause respiratory tract irritation.

POTENTIAL HEALTH EFFECTS

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

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.

SOLID product at ambient temperature: Wash thoroughly with
soap and water. Get medical attention if irritation develops or
persists.

EYE

HOT MOLTEN product: Cool burns with plenty of low-pressure water.
Get immediate medical attention.

SOLID product at ambient temperature: 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.

INHALATION

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

INGESTION

No adverse health effects are expected from accidental ingestion of
small amounts of this product.

NOTES TO PHYSICIAN

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

This product contains rosin or a rosin derivative. Rosin
decomposition products, present in smoke or fumes, have been

reported to cause respiratory sensitization (asthma) in susceptible individuals after repeated exposure.

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

Apply water to HOT MOLTEN resin fires from a safe, protected location to avoid body contact with hot resin.
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

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

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

For SOLID product: 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 area.

Keep container closed when not in use.

Check old product for deterioration regularly.

Control inventory.

Rotate stock periodically.

MATERIALS OR CONDITIONS TO AVOID

Water contact with HOT MOLTEN or HOT LIQUID resin may result in foaming or spattering, which can cause eye or skin burns.

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.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

WORK PRACTICES & ENGINEERING CONTROLS

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 (dust): If used under conditions that generate particulates (dust), the ACGIH TLV-TWA of 3 mg/m³ respirable fraction (10 mg/m³ 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 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.

Appropriate protective clothing

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. Product will burn.

9 PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE: hot molten viscous liquid at 150-210° C (302-410° F) or solid or flake

COLOR: pale to light yellow

ODOR:	typical rosin
Specific Gravity	1.07
Evaporation Rate	slower than butyl acetate
Vapor Density	heavier than air
Solubility In Water	negligible at 68° F
Softening Point	176 - 194° F

10 STABILITY & REACTIVITY

HAZARDOUS DECOMPOSITION PRODUCTS

None known. 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.

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

Not a skin irritant or sensitizer in a 200-subject repeated insult patch test. Skin was stripped prior to testing to assure maximal exposure to living tissue. Due to the physical nature of this material, may cause eye, skin and respiratory irritation. This product contains rosin or a rosin derivative. Smoke or fumes generated by heating may lead to respiratory sensitization (asthma) in susceptible individuals.

REPORTED ANIMAL EFFECTS

Not a skin irritant or sensitizer in the guinea pig maximization test. Skin was stripped prior to testing to assure maximal exposure to living tissue. A single exposure to vapors of the material heated to 176° C for four hours (nominal concentration 2.0 mg/L) caused minimal treatment related effects. Repeated exposure for four hours/day for 10 exposures at 176° C (nominal concentration 2.0 mg/L) caused initial weight loss and chromorrhinorrhea and death of 2/10 rats following the last exposure. SIMILAR PRODUCT: Oral LD50 (rat): > 2.0 g/kg. Subchronic 90-day rat feeding studies resulted in a no observed effect level (NOEL) of 1.0% in the diet.

CYTOTOXICITY

Not cytotoxic in the agar diffusion assay using L-202 mammalian fibroblast cells.

MUTAGENICITY/GENOTOXICITY INFORMATION

Not mutagenic based on bacterial tests of this or a similar product. Not mutagenic based on mammalian cell tests of this or a similar product.

12 ECOLOGICAL INFORMATION

ENVIRONMENTAL EFFECTS

SIMILAR PRODUCT: In a bacterial multiplication inhibition study, the toxicity threshold of 4797 mg/L was established for *Pseudomonas putida*. Product was tested as a suspension.

AQUATIC TOXICITY

SIMILAR PRODUCT: Acute aquatic LC50 (Carp): 2600 mg/l; product was tested as a suspension.

BIODEGRADABILITY

SIMILAR PRODUCT: Not readily biodegradable when tested by the Modified Sturm test protocol.

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, ICAO, IMDG or ADR regulations.

For specific information regarding transportation of this product, please contact the Hercules Transportation Department at (302) 594-7356 or FAX at (302) 594-7256.

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.

European EINECS : Included on EINECS list.

Japanese MITI : Included on MITI Gazette.

Korean KECL : Included on KECL Inventory.

Australian AICS : Included on AICS Inventory.

Philippine PICCS : Included in draft PICCS Inventory.

SARA TITLE III - SECTIONS 302/304

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

SARA TITLE III - SECTION 311 AND 312

HC-1: Acute 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	3	Serious Hazard
Fire	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.