



Ensinger
365 Meadowlands Blvd.
Washington, PA 15301
Ph: 724-746-6050
Fx: 724-746-9209

Ensinger Building Products
1 Main Street
Grenloch, NJ 08032
Ph: 856-227-0500
Fx: 856-232-1754

MATERIAL SAFETY DATA SHEET

TECANYL™ MT

EMERGENCY TELEPHONE: 724-746-6050 or 856-227-0500
Issue Date: July 22, 2008
Revised Date: December 3, 2008
TRADE NAME: Noryl HNA055
CHEMICAL NAME: Polyphenylene ether/High impact polystyrene and/or polystyrene blend

1. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS #
Polyphenylene ether	25134-01-4
High Impact polystyrene	9003-55-8
Polystyrene	9003-53-6

If present, components listed above are physical or health hazards as defined in the Hazard Communication Standard. The Quantities represent typical or average values for the materials shown. Additional compositional data are provided in REGULATORY INFORMATION, subject to supplier notification requirements.

2. HAZARDS IDENTIFICATION

Emergency Overview

- Material have slight or no odor.
- Can burn in a fire creating dense toxic smoke.
- Molten plastic can cause severe thermal burns.
- Fumes produced during melt processing may cause eye, skin, and respiratory tract irritation. Severe over-exposure may result in nausea, headache, chills, and fever.
- Secondary operations, such as grinding, sanding, or sawing can produce dust which may present an explosion or respiratory hazard.

HMIS rating

Health: 0 **Flammability:** 1 **Reactivity:** 0

Skin Contact: Stock shape product not likely to cause skin irritation
Eye Contact: Particulates and shavings, like other inert materials, are mechanically irritating to eyes
Inhalation: Stock shape inhalation unlikely due to physical form. Processing fumes from PPE resin are not considered toxic. In acute inhalation tests, laboratory rats were exposed to processing fumes at concentrations exaggerating those that would likely occur in workplace situations. During the exposure periods (6 hour duration) signs of eye and nasal irritation were observed. These signs of irritation disappeared shortly after the animals were removed from the exposure chamber. No deaths or signs of toxicity were noted during the fume exposure period. There were no distinct or consistent treatment related tissue or organ changes noted in gross necropsies.
Ingestion: Ingestion unlikely due to physical form.
Sensitization: No Information available
Other Information: OSHA, IARC and/or NTP have listed carbon, titanium dioxide, crystalline silica (quartz), respirable glass and certain heavy metals present in some colorants and fillers as carcinogens. If these materials are present in this product at significant quantities, they are shown in Section 1. These materials are essentially bound to the plastic matrix and are unlikely to contribute to workplace exposure under recommended processing conditions.

Chronic Information

Chronic Toxicity: No information available

Processing Issues: Processing fumes may cause irritation to the eyes, skin, and respiratory tract. In cases of severe exposure, nausea and headache can also occur. Grease-like processing fume condensates on ventilation ductwork, molds, and other surfaces can cause irritation and injury to skin.

Aggravated Medical Conditions: **MEDICAL RESTRICTION:** There are no known health effects aggravated by exposure to this product. However, certain sensitive individuals and individuals with respiratory impairments may be affected by exposure to the components in the processing vapors

3. FIRST AID MEASURES

Inhalation: Move to fresh air in case of accidental inhalation of fumes from overheating or combustion. If symptoms persist, call a physician.

Skin Contact: Cool skin rapidly with cold water after contact with hot polymer. Wash off immediately with soap and plenty of water. Consult a physician.

Eye Contact: Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. If eye irritation persists, consult a specialist.

Ingestion: No hazards which require special first aid measures.

Precautions: Processing fumes inhalation may be irritating to the respiratory tract. If symptoms are experienced remove person from the source of contamination or move person to fresh air and obtain medical advice.

4. FIRE FIGHTING MEASURES

Autoignition Temperature: 490°C (914°F), estimated

Explosive Limits upper: Not Determined
lower: Not Determined

Suitable Extinguishing Media: Water spray or mist foam

Extinguishing media which MUST NOT be used for safety reasons: Carbon dioxide and dry chemical are not recommended due to their lack of cooling capacity; may permit re-ignition

Hazards from Combustion Products: Fire will product dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments

Special Protective Equipment: Do not enter fire area without proper protection including self contained breathing apparatus and full protective equipment. Fight fire from a safe distance and protected location due to the potential of hazardous vapors and decomposition products.

Specific Hazards: Take precautionary measure against static discharges. During processing, dust may form explosive mixture in air. Thermal decomposition can lead to release of irritating gasses and vapors.

5. ACCIDENTAL RELEASE MEASURES

Clean Up: Sweep up and shovel into suitable containers for disposal. Do not create a powder cloud by using a brush or compressed air.

Personal Precautions: See Section 7

Environmental Release: Do not flush into surface water or sanitary sewer system. Should not be released into the environment.

6. HANDLING AND STORAGE

Handling: Handle in accordance with good industrial hygiene and safety practice. Provide for appropriate exhaust ventilation and dust collection at machinery. Avoid dust formation. All metal parts of processing equipment must be earthed.

Storage: Keep in a dry and cool place. Keep away from heat and sources of ignition

7. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits: No components with information, unless noted below

Engineering Measures to Reduce Exposure: Handle in accordance with good industrial hygiene and safety practice. Provide for

appropriate exhaust ventilation at machinery. Processing fume condensate may be a fire hazard and toxic: remove periodically from exhaust hoods, ductwork, and other surfaces using appropriate personal protection.

- Hand Protection:** Protective gloves
- Eye Protection:** Safety glasses with side-shields or chemical goggles. In addition, use full face shield when cleaning processing fume condensates from hood, ducts, and other surfaces.
- Respiratory Protection:** When using this product at elevated temperatures, implement engineering systems, administrative controls or a respiratory protection program (including a respirator approved for protection from organic vapors, acid gases and particulate matter) if processing fumes are not adequately controlled or operators experience symptoms of overexposure. If dust or powder are produced from secondary operations such as sawing or grinding, use a respiratory approved for protection from dust.
- Skin and Body Protection:** Long sleeved clothing
- Hygiene Measures:** When using, do not eat, drink or smoke.

8. PHYSICAL AND CHEMICAL PROPERTIES

- Physical State:** Solid
- Appearance:** Stock Shape
- Color:** Various Colors
- Odor:** Slight or None
- Melting Point Range:** This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures.
- Autoignition Temperature:** 490°C (914°F) estimated
- Vapor Pressure:** Negligible
- Water Solubility:** Insoluble
- Evaporation Rate:** Negligible
- Specific Gravity:** >1; (water = 1)
- VOC Content (%):** Negligible
- Explosive Limits upper:** Not determined
- lower:** Not determined

9. STABILITY AND REACTIVITY

- Stability:** Stable at normal conditions. Hazardous polymerization does not occur.
- Conditions to Avoid:** Avoid temperatures above 490°C. To avoid thermal decomposition, do not overheat. Heater can release hazardous gases. Do not exceed melt temperature recommendations. In order to avoid autoignition/hazardous decomposition of hot thick masses of plastic, purgings should be collected in small, flat, shapes or thin strands to allow for rapid cooling. Quench in water. Do not allow product to remain in barrel at elevated temperatures for extended periods of time: purge with a general purpose resin.
- Hazardous Decomposition Products:** Processing fumes evolved at recommended processing conditions may include trace levels of hydrocarbon fragments, alkylphenols, aldehydes, alcohols, aliphatic amines, dimethylcyclohexanone, trimethylanisole, dihydrobenzofuran.

10. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

- LD50/oral/rat:** >15g/kg estimated
- LD50/dermal/rabbit:** >2g/kg estimated
- Inhalation:** Inhalation unlikely due to physical form. Processing fumes from PPE resin are not considered toxic. In acute inhalation tests, laboratory rats were exposed to processing fumes at concentrations exaggerating those that would likely occur in workplace situations. During the exposure periods (6 hour duration) signs of eye and nasal irritation were observed. These signs of irritation disappeared shortly after the animals were removed from the exposure chamber. No deaths or signs of toxicity were noted during the fume exposure period. There were no distinct or consistent treatment related tissue or organ changes noted in gross necropsies.
- Eye Contact:** Particles, like other inter materials, are mechanically irritating to the eyes.
- Skin Contact:** Shapes not likely to cause skin irritation.

Ingestion: Ingestion unlikely due to physical form.
Chronic Toxicity: No information available.
Subchronic Toxicity: In a 13 week dust inhalation study, laboratory rats were exposed to up to 50 mg/m³ PPE dust for 6 hrs/day for 13 weeks with a 13 week non-exposure recovery period. there was no evidence of systemic toxicity at the highest dose. Localized toxicity was observed in the lungs and regional lymph nodes of the 50 mg/m³ exposure group. These findings decreased in severity in the 7 and 1 mg/m³ exposure groups. A no adverse effect level for PPE is estimated to be 7 mg/m³ and a no observable effect level is 1 mg/m³.
Primary Irritation: Substance does not generally irritate and is only mildly irritating to the skin.
IARC: Not listed
OSHA: Not regulated
NTP: Not tested
Remarks: The toxicological data has been taken from products of similar composition.
Special Studies: Polyphenylene ether: in two independent 2 year dietary studies, purebred beagles and laboratory rats were fed polyphenylene ether resin powder (up to 10% by weight in the animal diet). In both studies, there were no adverse effects on physical appearance, behavior, growth, food consumption, survival, clinical laboratory results, organ weights, or gross or microscopic pathology. In a 6 month chronic inhalation study, rats and guinea pigs exposed 6 hrs/day up to 300 mg/m³ PPE dust developed no physical, nutritional, hematologic, clinical or pathological reaction except to lung tissue changes which consisted of macrophage accumulation, many of which were degenerative in the pulmonary alveoli. Polyphenylene ether is not a mutagen by Ames (Salmonella) Assay with and without activation.

11. ECOLOGICAL INFORMATION

Ecotoxicity Effects: Do not flush into surface water or sanitary sewer system.
Other Information: Ecological damages are not known or expected under normal use.

12. DISPOSAL CONSIDERATIONS

Waste Disposal: Recycling ins encouraged. Landfill or incinerate in accordance with federal, state, and local requirements. Collected processing fume condensate and incinerator ash should be tested to determine waste classification.
US EPA Waster number: None

13. TRANSPORTATION INFORMATION

Transport Classification: Not regulated as hazardous for shipment, unless noted below, under current transportation guidelines.
DOT
ADR/RID/ADNR
IMDG
ICAO
IATA-DGR
MEXICO

14. REGULATORY INFORMATION

International Inventories:

TSCA (USA): Listed
DSL/NDSL (Canada): Listed
EINECS/ELINCS (Europe): Listed
ENCS (Japan): Listed
IECA (China): Listed
KECL (Korea): Listed
PICCS (Philippines): Listed
AICS (Australia): Listed

Other Inventory Information:

A "Listed" entry above means all chemical components are on the respective inventory list and/or a qualifying exemption

exists for one or more components. A "Not Listed" entry above indicates one or more components is restricted from import or manufacture into that country/region.

SARA 313:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulation, Part 372.

SARA (311, 312) Hazard Class:

Acute Health Hazard	N
Chronic Health Hazard	N
Fire Hazard	N
Sudden Release of Pressure Hazard	N
Reactive Hazard	N

Canada

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class:

Non-controlled

California Proposition 65

this product does not contain components known to the State of California to cause cancer and/or reproductive effects.

RoHS EU Directive 2002/95/EC

This product complies with RoHS - it does not intentionally contain banned chemicals.

This material safety data sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe this information to be correct but cannot guarantee its accuracy or completeness. Health and safety precaution in this data sheet may not be adequate for all individuals and/or situations. It is the user's obligation to evaluate and use this product safely and to comply with all applicable laws and regulation. No statement made in the data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents. No warranty is made, either express or implied.