

# Safety Data Sheet

**Tecaran® Natural & Black**



ISSUE DATE: 06/08/2015

## 1. PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME: Tecaran®  
SYNONYMS: Acrylonitrile Butadiene Styrene  
PRODUCT COLORS: Natural & Black

MANUFACTURER: Ensinger Inc.  
DIVISION: Stock Shapes  
ADDRESS: 365 Meadowlands Blvd., Washington, PA 15301

EMERGENCY PHONE: (724) 746-6050  
OTHER CALLS: (856) 227-0500

CHEMICAL NAME: Acrylonitrile Butadiene Styrene  
CHEMICAL FORMULA: basic formula  $(C_8H_8)_x \cdot (C_4H_6)_y \cdot (C_3H_3N)_z$

PRODUCT USE: Stock Shape for Machining  
PREPARED BY: Allyson M. Crouse, Technical Resource Manager

SECTION 1 NOTE: Revised June 8, 2015

## 2. HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW: Mechanical injury only.

ROUTES OF ENTRY: Eyes

### POTENTIAL HEALTH EFFECTS

EYES: Solid or dust causes irritation or corneal injury due to mechanical action.

SKIN: Essentially nonirritating to skin. Mechanical injury only. Molten material may burn skin.

INGESTION: Single dose oral LD50 has not been determined. Single dose oral toxicity is believed to be very low. Now hazards anticipated from ingestion incidental to industrial exposure.

INHALATION: Dust may cause irritation to upper respiratory tract. At room temperature, exposure to vapors are unlikely due to physical properties, normal processing temperatures may generate vapors, which may cause irritation if ventilation is inadequate.

ACUTE HEALTH HAZARDS: None Known

# Safety Data Sheet

## Tecaran® Natural & Black

ISSUE DATE: 06/08/2015

CHRONIC HEALTH HAZARDS: None Known

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: None Known

CARCINOGENICITY: None Known

Carbon Black, CAS: 1333-86-4

OSHA: (PEL, 8HR) 3.5 mg/m<sup>3</sup> (FRL\_TWA)

OSHA: (PEL, 8HR) 3.5 mg/m<sup>3</sup> (TL\_PEL)

ACGIH: TWA: 3.5 mg/m<sup>3</sup> (Inhalable Fraction); Notations: Not Classifiable as a Human Carcinogen

Styrene, CAS: 100-42-5

OSHA: (PEL, 8HR) 425 mg/m<sup>3</sup> (FRL\_STEL)

OSHA: (PEL, 8HR) 215 mg/m<sup>3</sup> (FRL\_TWA)

ACGIH: STEL: 40 ppm

ACGIH: TWA: 20 ppm

Notations: Not Classifiable as a Human Carcinogen , BEI ; Crit Eff: CNS impairment ,Peripheral neuropathy , Upper respiratory tract irritation

Particulates:

OSHA: Particulates not otherwise regulated/OSHA (PEL) 15 mg/m<sup>3</sup> (TWA, Total Dust)

Particulates not otherwise regulated/OSHA (PEL) 5 mg/m<sup>3</sup> (TWA, Respirable Dust)

ACGIH: Particulates not otherwise regulated/ACGIH (TLV) 10 mg/m<sup>3</sup> (TWA, Total Dust)

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

#### INGREDIENT:

<u>CAS NO.</u>	<u>% WT</u>
Modified Poly (acrylonitrile-butadiene-styrene), 9010-94-0]/ Poly (styrene-acrylonitrile), 9003-54-7 blend	
Carbon Black, 1333-86-4	0 – 1.0
Styrene, 100-42-5	0.1 – 0.3

The non-hazardous components and exact percentage (concentration) of the composition have been withheld as a trade secret.

This product consists primarily of high molecular weight polymers which are not expected to be hazardous. The ingredients in this product are present within the polymer matrix and are not expected to be hazardous.

# Safety Data Sheet



## **Tecaran® Natural & Black**

ISSUE DATE: 06/08/2015

This product contains a proprietary blend of components encapsulated within a polymer matrix. These components are not regarded as hazardous under 2012 OSHA Hazard Communication Standard; 29CFR Part 1910.1200.

### **4. FIRST AID MEASURES**

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**EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 15 minutes. Mechanical effects only.

**SKIN:** Wash off in flowing water or shower.

**INGESTION:** No adverse effects anticipated by this route of exposure incidental to proper industrial handling. If ingested, induce vomiting; if patient is conscious. Call a poison control center/physician, if patient feels unwell.

**INHALATION:** Remove to fresh air, if effects occur. Consult a physician.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** No specific antidote. Supportive care. Treatment based on judgment of the physician in response to reactions of the patient.

### **5. FIRE FIGHTING MEASURES**

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**AUTOIGNITION TEMPERATURE:** Not Available

**EXTINGUISHING MEDIA:** Dry chemical, carbon dioxide, water spray or "alcohol" foam.

**SPECIAL FIRE FIGHTING PROCEDURES:** Do not use a solid water stream as it may scatter and spread fire. Water is the best extinguishing medium. Carbon dioxide and dry chemical are not generally recommended, because of their lack of cooling capacity may permit re-ignition on larger fires.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None Known

**HAZARDOUS DECOMPOSITION PRODUCTS:** Carbon oxides, hydrogen fragments, hydrogen cyanide, nitrogen oxides.

**SECTION 5 NOTES:** Wear full protective suit. In case of combustion, use a suitable breathing apparatus. Dust particles in the atmosphere are combustible and may be explosive. Keep away from heat and sources of ignition.

### *6. ACCIDENTAL RELEASE MEASURES*

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ACCIDENTAL RELEASE MEASURES: Ventilate the area and prevent access to unauthorized people. Wear suitable personal protective equipment. Do not allow entry to drains, water courses or soil. Prevent spreading by use of suitable barriers. Take up with suitable equipment, fill up in air-tight containers and give further treatment as soon as possible.

### *7. HANDLING AND STORAGE*

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HANDLING AND STORAGE: Avoid accumulation of dust in enclosed space. Use in well-ventilated area. Static discharge (spark) in high dust environments may be explosive. Electrostatic charge may build up during handling. Equipment should be grounded and bonded. Metal containers involved in the transfer of this material should be grounded and bonded. All electrical equipment should be grounded and conform to applicable electric codes and regulatory requirements. Material creates dangerous slipping hazard on hard surfaces. After handling, always wash hands thoroughly with soap and water. Keep away from strong oxidizing compounds. Store in a well-ventilated place. Provide ventilation and wear necessary protectors.

OTHER PRECAUTIONS: Obtain special instructions, before use. Do not breathe dust. Wash hands thoroughly after handling. Do not eat, drink or smoke; when machining this product. Use personal protective equipment as required.

### *8. EXPOSURE CONTROLS/PERSONAL PROTECTION*

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ENGINEERING CONTROLS: Standard ventilation required

VENTILATION: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

RESPIRATORY PROTECTION: For most conditions a dust mask is sufficient; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator.

EYE PROTECTION: Safety glasses should be sufficient for most operations; however, for dusty operations wear chemical goggles. If vapor exposure causes eye discomfort, use a full-face respirator

SKIN PROTECTION: No precautions other than clean body-covering clothing should be needed.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None Known

# Safety Data Sheet



## **Tecaran® Natural & Black**

ISSUE DATE: 06/08/2015

Special Precautions to be taken in Handling and Storage: Store in sealed containers. Protect from atmospheric moisture. Molten material can produce thermal burns. Avoid skin contact. Fumes released during normal processing may cause irritation. Provide adequate ventilation. Heating the resin above normal processing temperatures may cause hazardous decomposition products. Do not overheat. Handling and fabrication of plastic resins can result in the generation of dust. Dust results from sawing, filing, and sanding of plastic parts in post-molding operations. Quantities of dust in air may be combustible and may cause respiratory irritation.

### EXPOSURE GUIDELINES:

Carbon Black, CAS: 1333-86-4

OSHA: (PEL, 8HR) 3.5 mg/m<sup>3</sup> (FRL\_TWA)

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ACGIH: TWA: 3.5 mg/m<sup>3</sup> (Inhalable Fraction); Notations: Not Classifiable as a Human Carcinogen

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## **9. PHYSICAL AND CHEMICAL PROPERTIES**

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APPEARANCE: Opaque color stock shape

ODOR: None

PHYSICAL STATE: Solid

AUTOIGNITION TEMPERATURE: Not Available

MELTING POINT: Not Available

SPECIFIC GRAVITY (H2O = 1): >1

# Safety Data Sheet



## **Tecaran® Natural & Black**

ISSUE DATE: 06/08/2015

SOLUBILITY IN WATER: Insoluble

### *10. STABILITY AND REACTIVITY*

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STABILITY: Stable under normal conditions.

CONDITIONS TO AVOID (STABILITY): To avoid thermal decomposition, avoid elevated temperatures. Heating can result in the formation of gaseous decomposition products, some of which may be hazardous. Do not exceed melt temperature recommendations in product literature.

INCOMPATIBILITY (MATERIAL TO AVOID): None Known

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Process vapors under recommended processing conditions may include trace levels of hydrocarbons, styrene, acrylonitrile, acrolein, acetaldehyde, acetophenone, ethyl benzene, cumene, alpha methylstyrene, 4-vinylcyclohexene, phenols.

HAZARDOUS POLYMERIZATION: Not Applicable

### *11. TOXICOLOGICAL INFORMATION*

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TOXICOLOGICAL INFORMATION: No data – In solid state, this material is not considered as being harmful to human health.

#### **Acute Toxicity Resin**

LD50/oral/rat: >5000 mg/kg (estimated)

LD50/dermal/rabbit: >2000 mg/kg estimated

IARC: Not listed Styrene: Group 2B (possible human carcinogen) - In subsequent reviews in 1994 and 2002, IARC chose to maintain its classification for styrene. In chronic inhalation studies, mice, but not rats develop lung tumors following styrene exposure, even though both species form DNA adducts.

OSHA: Not regulated

NTP: Not tested Styrene: is reasonably anticipated to be a human carcinogen based on limited evidence of carcinogenicity from studies in humans, sufficient evidence of carcinogenicity from studies in experimental animals, and supporting data on mechanisms of carcinogenesis (2011).

#### **Special Studies:**

**Styrene:** A reproduction study in rats exposed to 125 and 250 ppm in drinking water (approximately 14-21 mg/kg/day) produced no treatment-related effects on reproductive performance over 3-generations. The only treatment related findings were reduced pup survival index in the F1 and

## **Tecaran® Natural & Black**

ISSUE DATE: 06/08/2015

F2 offspring. There was no evidence of developmental effects and no other effects were reported. The parental NOEL was 250 ppm and the NOEL for the F1 and F2 offspring was 125 ppm. In developmental toxicity studies in rats, rabbits, and hamsters styrene was not a selective toxicant to the fetus and was toxic at only those doses that produced maternal toxicity. In humans, styrene is associated with central nervous system depression (headache, fatigue, nausea, and dizziness) at inhalation concentrations greater than 50 ppm. Styrene has also been reported to reduce sensory nerve conduction in occupational settings after exposure to 100 ppm or more. Styrene has also been reported to produce color vision deficiencies (dyschromatopsia) at concentrations greater than 8 ppm (averaging 24 ppm). Twelve epidemiology studies have been reported for styrene and half have supported the hypothesis that styrene produces lymphatic and hematopoietic cancers (LHC). However, those that show an increase of LHC has generally been small in size (limited statistical power), have shown no dose-response relationship, and/or had multiple chemical exposures. Of the six studies that have not shown an association with styrene and LHC, these studies tended to be larger in size (higher statistical power), had an older study population, and had good exposure data. Overall, the weight of evidence suggests that there is not an association of LHC and styrene exposure in humans. In a recent inhalation cancer bioassay, Sprague Dawley derived rats (70/sex/group) were exposed whole body to styrene vapor at 0, 50, 200, 500, or 1000 ppm 6 h/day 5 days/week for 104 weeks. Males exposed to 500 and 1000 ppm and females exposed to 200 ppm and higher gained significantly less weight than the controls. There were no changes of toxicologic significance in hematology, clinical chemistry, urinalysis, or organ weights. Styrene-related non-neoplastic histopathologic changes were confined to the olfactory epithelium of the nasal mucosa. The incidence and severity were related to dose. There was no evidence that styrene exposure caused treatment related increases of any tumor type in males or females or in the number of tumor bearing rats in the exposed groups compared to controls. In 2-year carcinogenicity bioassays conducted by the National Toxicology Program, rats and mice (50/sex/group) received 0, 500, 1000, or 2000 mg/kg/day and 0, 150, or 300 mg/kg/day, respectively, via oral gavage. In male or female rats and female mice there was no significant difference in tumor incidence when compared to the control groups. In male mice there was a positive association between styrene dose and the incidence of the combination of adenomas and carcinomas of the lung. However, due to the high background incidence of this tumor type in male mice, no firm conclusion was drawn for the carcinogenicity. In a study that administered styrene (125 and 250 ppm) in the drinking water of rats for 2 years, there was no evidence of carcinogenicity. In other chronic inhalation toxicity studies, rats were exposed to styrene via inhalation at concentrations up to 300 ppm for 4-6 hours/day, 5 days/week, for 1 year or up to 1000 ppm for 2 years. There was a slightly increased, but not statistically significant, incidence of mammary tumors in the females in both studies. Because the control incidence was also high and there was no dose-response relationship the studies were considered to be negative.

**Carbon Black:** The International Agency for Research on Cancer (IARC) has determined that carbon black is a class 2B known animal and possible human carcinogen by the route of inhalation. Rats exposed to high doses of carbon black by inhalation developed statistically significant increases in lung fibrosis and lung tumors. Carbon Black: The scientific discussions about the carcinogenic potential of inorganic low solubility particles (fine dust) including carbon black has not been concluded. Many inhalation toxicologists believe the lung fibrosis and tumors that developed in rats following exposure to carbon black result from massive accumulation of small dust particles that overwhelm the clearance mechanism

# Safety Data Sheet



## Tecaran® Natural & Black

ISSUE DATE: 06/08/2015

and produce what is termed "lung overload," an effect considered to be rat specific and not relevant to humans. In addition, based on epidemiological studies, no causal link between carbon black exposure and cancer risk in humans has been demonstrated.

### 12. ECOLOGICAL INFORMATION

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ECOLOGICAL INFORMATION: No data – This material does not harm the environment, but is not biodegradable.

### 13. DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD: Dispose of contents/containers in accordance with local, regional, national and international regulations.

### 14. TRANSPORT INFORMATION

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U.S. DEPARTMENT OF TRANSPORTATION  
Not regulated

### 15. REGULATORY INFORMATION

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#### U.S. FEDERAL REGULATIONS

**TSCA (TOXIC SUBSTANCE CONTROL ACT):** All ingredients are either exempt or listed on the TSCA Chemical Substance Inventory.

#### **SARA (313) Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):**

This product contains a chemical or chemicals that are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Name	CAS Number	Weight %	CERCLA/SARA 313 de minimus:
Styrene	100-42-5	0.1 - 0.3	0.1

#### Canada - WHMIS Classification:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR. Unless noted below, this product is non-controlled. Some classifications may not apply to the entire product.

Chemical Name	Weight %	WHMIS hazard class:
Styrene, 100-42-5	0.1 - 0.3	0.1%; English Item 1473; French Item 1508 B2; D2A; F



# Safety Data Sheet

**Tecaran® Natural & Black**



ISSUE DATE: 06/08/2015

## California Proposition 65:

Components in this product known to the State of California to cause cancer and/or reproductive effects, are listed below:

Chemical Name	Weight %	California Proposition 65:
Carbon black,1333-86-4	0.3-1.0	Listed: February 21, 2003 Carcinogenic. (airborne, unbound particles of Respirable size)
Acrylonitrile, 107-13-1	0.01 - 0.10	Type of Toxicity: cancer

## 16. OTHER INFORMATION

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### ADDITIONAL INFORMATION

MEDICAL USE: CAUTION – Do not use in medical applications involving permanent implantation in the human body.

*This 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 responsibility to evaluate and use this product safely and to comply with all applicable laws and regulations. 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 may infringe existing patents. No warranty is made, either expressed or implied.*