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Material Safety Data Sheet

TECARAN™ ABS Unfilled Natural and Black

EMERGENCY TELEPHONE: 724-746-6050 or 856-227-0500
ISSUE DATE: October 1, 1985
REVISION DATE: September 12, 2011
TRADE NAME: TECARAN™
PART NAME: ABS
CHEMICAL NAME: Modified Poly (acrylonitrile-butadiene-styrene) ABS

1. Information on Ingredients

MATERIAL	CAS Number	%
Poly (acrylonitrile-butadiene-styrene)	9010-94-0	>98
HAZARDOUS COMPONENTS		
Carbon Black	1333-86-45	0.1 – 1.0

The component listed above is a physical or health hazard as defined in the Hazard Communication Standard. The quantities represent typical or average values for the materials shown. Additional compositional data are provided in Section 13, REGULATORY INFORMATION, subject to supplier notification requirements.

This is a polymeric material. Any hazardous constituents are wetted by the polymer system, and therefore are unlikely to present exposure under normal conditions of processing, machining, and handling.

2. Hazard Identification

EMERGENCY OVERVIEW

- Stock shape products with slight or no odor
- Machining shavings may create a slipping hazard
- Can burn in a fire generating dense, toxic smoke
- Molten material in contact with skin 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 cutting can generate dust which may present an explosion or respiratory hazard.

HMIS Rating

Health: 0

Flammability: 1

Reactivity: 0

POTENTIAL HEALTH EFFECTS

Immediate Effects

Inhalation	Dust irritating to the respiratory tract. Overheating in processing may generate hazardous, irritating vapors.
Skin	Stock shape polymer not likely to cause skin irritation. Polymer particles may cause mechanical irritation. The molten product can cause serious burns.
Eyes	Dust and particles, like other inert materials, are mechanically irritating to eyes.
Ingestion	Ingestion unlikely due to physical form. Low toxicity by this route is expected based on the biological activity of high molecular weight polymers.
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.

Medical conditions which may be aggravated by exposure:

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 components in the processing vapors.

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

3. First Aid Measures

INHALATION

Move to fresh air in case of accidental inhalation of vapors. Seek medical attention immediately if symptoms occur.

SKIN CONTACT

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advised. If molten polymer contacts the skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Seek medical treatment for thermal burn.

EYE CONTACT

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician if irritation persists.

INGESTION

No specific intervention is indicated as compound is not likely to be hazardous by ingestion. If swallowed, do not induce vomiting – seek medical advice.

PRECAUTIONS

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

4. Fire Fighting Measures

FLAMMABLE PROPERTIES

Autoignition Temperature: No information available

Explosive Limits	Upper:	Not determined
	Lower:	Not determined

Fire and Explosion Hazards:

Like most organic materials in powder form, dust generated from this product may form a flammable dust-air mixture. Potential for a dust explosion may exist. Minimize the generation and accumulation of dust. Keep away from sources of ignition.

Fire will produce dense black smoke containing hazardous combustion products, carbon oxides, hydrocarbon fragments, hydrogen cyanide, nitrogen oxides

EXTINGUISHING MEDIA

Water spray mist, Foam

Unsuitable extinguishing Media for safety reasons: Carbon dioxide and dry chemical are not recommended because of their lack of cooling capacity may permit re-ignition

FIRE FIGHTING INSTRUCTIONS

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus and protective suit.

5. Handling and Storage

HANDLING

Protection – fire and explosion

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.

STORAGE

Material Storage

Store in a cool dry place. Keep away from heat sources, sources of ignition and sunlight.

6. Exposure Controls / Personal Protection

ENGINEERING CONTROLS

VENTILATION: If hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting, grinding, or machining operations with this material, use local exhaust to control the concentration of dust below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye or face contact with molten material. A full face mask positive-pressure air-supplied respirator provides protection from eye irritation.

RESPIRATORS

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 process fumes are not adequately controlled or operators experience symptoms of overexposure.

During grinding, sawing, routing, drilling or sanding operations use a NIOSH/MSHA approved air-purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

PROTECTIVE CLOTHING

If there is potential contact with hot/molten materials, wear heat resistant clothing and footwear. Wear leather or cotton gloves when grinding, sawing, routing, drilling or sanding.

EXPOSURE GUIDELINES

EXPOSURE LIMITS

CARBON BLACK

PEL (OSHA):	3.5 mg/m ³ , 8 hr. TWA, total dust
TLV (ACGIH):	3.5 mg/ m ³ , 8 hr. TWA, respirable dust
Canada – Alberta	3.5 mg/m ³ , 8 hr. exposure limits
Mexico OEL	3.5 mg/m ³

7. Physical and Chemical Properties

PHYSICAL DATA

Melting Point:	This product does not exhibit a sharp melting point but softens gradually over a wide range of temperatures
Ignition Temperature:	No information available
Solubility in Water:	Insoluble
Vapor Pressure:	Negligible
Evaporation Rate:	Negligible
Odor:	None or Slight
Color:	Opaque Cream or Black
Form:	Rod, Plate, Sheet or Tube (stock shape product)
Specific Gravity:	>1; (water = 1)
VOC Content (%):	Negligible
Explosive Limits	
Upper:	Not determined
Lower:	Not determined

8. Stability and Reactivity

CHEMICAL STABILITY

Stable at normal temperatures and storage conditions. Hazardous polymerization does not occur.

CONDITIONS TO AVOID

To avoid thermal decomposition, do not overheat. Heating can result in the formation of gaseous decomposition products, some of which may be hazardous. Do not exceed melt temperature recommendations. In order to avoid Autoignition and hazardous decomposition of hot thick masses of plastic, purgings should be collected in small, flat, thin shapes and quenched with water to allow for rapid cooling. Do not allow product to remain in barrel at elevated temperatures for extended periods of time: purge with a general purpose resin.

HAZARDOUS COMBUSTION OR DECOMPOSTION

Process vapors under recommended processing conditions may include trace levels of hydrocarbon fragments, styrene, acrylonitrile, acrolein, acetaldehyde, acetophenone, ethyl benzene, cumene, alpha methylstyrene, 4-vinylcyclohexene, phenol.

POLYMERIZATION

Polymerization will not occur.

9. Toxicological Information

ACUTE TOXICITY

LD50/oral/rat:	>5000 mg/kg, estimated
LD50/dermal/rabbit:	>2000 mg/kg, estimated

Inhalation:	Unlikely due to physical form
Eye Contact:	Particles, like other inert materials, are mechanically irritating
Ingestion:	Unlikely due to physical form
Chronic Toxicity:	No information available
Subchronic Toxicity:	No information available
Primary Irritation:	Does not generally irritate and is only mildly irritating to skin
IARC:	Not listed
OSHA:	Not regulated
NTP:	Not Tested

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 of 3 generations. The only treatment related findings were reduced pup survival index in the F1 and 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 material toxicity. In humans, styrene is associated with central nervous system depression (headache, fatigue, nausea, and dizziness) at concentrations greater than 50 ppm. Styrene has also been reported to reduce sensory nerve conductions in occupation settings after exposure to 100 ppm or more. Styrene has also been reported to product color vision deficiencies (dyschromotopsia) 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 hematopoetic cancers (LHC). However, those that showed 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 and 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 a 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 toxicological

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 on 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 on mammary tumors in the females in both studies. Because the control incidence was also high and there was no dose-response relations 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.

10. Ecological Information

AQUATIC TOXICITY

No information is available. Toxicity is expected to be low based on insolubility in water. Do not discharge to streams, ponds, lakes or sewers.

ENVIRONMENTAL FATE/INFORMATION

This material is considered to be non-biodegradable

11. Disposal Considerations

WASTE DISPOSAL

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled, but incinerator must be capable of scrubbing out acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulation.

12. Transportation Information

SHIPPING INFORMATION

Not regulated in transportation by DOT/IMO/IATA.

13. Regulatory Information

U.S. FEDERAL REGULATIONS

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

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 indicated on 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 chemical which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, 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

STATE REGULATIONS (U.S.)

STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

WARNING – Substances known to the state of California to cause cancer, birth defects or other reproductive harm – Carbon Black.

CANADIAN REGULATIONS

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

WHMIS Classification:

Not a WHMIS controlled product.

WHMIS Ingredient Disclosure List:

This product does not contain substances required to be disclosed according to the Canada WHMIS Ingredient Disclosure List

California Proposition 65

Components in the 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 133-86-4	0.1 - 1.0	Listed: Feb. 21, 2003 Carcinogenic (airborne, unbound particles of respirable size)
Acrylonitrile 104-13-1	0.01 - 0.10	Listed: July 1, 1987 Carcinogenic
Bytyle benzyl phthalate 85-68-7	0.1 - 1.0	Listed: Dec. 2, 2005 Developmental toxin.

RoHS EU Directive 2002/95/EC

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

14. Other Information

ADDITIONAL INFORMATION

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 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.