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Material Safety Data Sheet
CARBOMIX® Black Masterbatch
1606K, 1606R, 1609

1. GENERAL INFORMATION

Chemical Name: Styrene-Butadiene Rubber, Aromatic Oil Extended Carbon Black Masterbatch
 CAS Number: mixture (see below)
 CAS Name: 1,3-Butadiene polymer with Ethenyl benzene
 Product Use: Rubber articles and rubber modified articles

2. CHEMICAL COMPOSITION

<u>Ingredient</u>	<u>CAS #</u>	<u>Max.Wt.%</u>	<u>Hazard Classification</u>
Styrene-Butadiene Rubber	9003-55-8	62	NH
Disproportionated Tall Oil	61790-12-3	5	Hazardous by OSHA
Disproportionated Rosin	8050-09-7	5	Hazardous by OSHA
Aromatic Petroleum Oil	64742-04-7	8	Carcinogenic by IARC
Carbon Black	1333-86-4	32	Hazardous by OSHA

3. PHYSICAL DATA

Physical State:	Solid, Bales	Odor:	none to
slight			
Appearance:	Black, with grey balecoating	Odor Threshold:	NE
Melting/Freezing Points:	NA	Specific Gravity (range):	1.10-1.15
Vapor Pressure:	NA	Boiling Point:	NA
Vapor Density:	NA	Volatiles (% by weight, @105°C):	0.75 max
Solubility in Water at 20°C:	Insoluble	Evaporation rate:	NA
Coefficient in Water/Oil Distribution:	NE	pH:	NA

4. FIRE AND EXPLOSION HAZARD DATA

Flash Point, Method (see note 1):	210°C (410°F) COC method	Upper/Lower Explosive Level:	NA
Auto Ignition Temperature:	Above 388°C (730°F)	Upper/Lower Flammable Limits:	NE
Sensitivity to Static Discharge:	NA	Sensitivity to Impact/Shock:	NA
Ignition Temperature:	Above 210°C (410°F)		
Combustible:	No, but the product will burn if ignited.		
Hazardous Combustion Products:	Carbon monoxide, carbon dioxide, products from incomplete combustion, silicates, and various hydrocarbons.		
Extinguishing Media:	All fire extinguishing media permitted - foam or water fog recommended.		
Special Fire Fighting Procedure:	During emergency conditions, exposure to thermal decomposition products may cause a health hazard. Use of NIOSH approved self-contained breathing apparatus is recommended.		

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5. PROTECTIVE AND PREVENTIVE MEASURES

Exposure Guidelines: Component	PEL (OSHA)	TLV (ACGIH)	Remarks
Aromatic Petroleum Oil (as mist)	5.0 mg/m ³	5.0 mg/m ³	(see notes 2 & 3)
PPAH/CTPV	0.2 mg/m ³	0.2 mg/m ³	(see note 4)
Carbon Black (as dust)	3.5 mg/m ³	3.5 mg/m ³	(see note 5)

Personal Protective Equipment: **Eye:** Wear Safety glasses.
Skin: Wear clothing appropriate to prevent skin contact. Use gloves resistant to chemicals and petroleum distillates. Where contact may occur with hot material, wear thermal resistant gloves, arm protection, and a face shield.
Respiratory: Not normally required at ambient temperatures. If processing in area where ventilation is inadequate or ignition has occurred, wear a NIOSH-approved organic vapor respirator with mechanical filtration.

Handling Procedures and Equipment: Avoid skin and eye contact, practice good personal hygiene. Avoid inhalation of fumes/vapors from hot rubbers, compounds and vulcanizates.

Engineering Controls: Local exhaust ventilation is recommended during all hot processing operations.

6. SPECIAL REGULATORY HAZARD CLASSIFICATIONS FOR HEALTH, SAFETY, AND FOOD

OSHA: The following ingredients in this product are regulated individually as hazardous materials under OSHA Hazard Communication Standard 29 CFR Part 1910.1200: Aromatic Petroleum Oil is regulated as carcinogenic. (See note 3)
Carbon Black is considered a nuisance dust hazard. (See note 5)
Disproportionated Tall Oil and Disproportionated Rosin are eye and skin irritants.

FDA: Products are not approved for direct or indirect contact with foodstuffs.

TSCA: Components of these products are listed under TSCA Chemical Substance Inventory.

TRANSPORTATION CLASSIFICATIONS:

United States DOT: Designation and labeling are not applicable, as products are not defined or designated as a hazardous material by U.S. Department of Transportation under Title 49 of CFR.

Canada: These products are not regulated under the Canadian Transportation of Dangerous Goods Regulations.

IATA: These products are not regulated under the International Air Transport Association Dangerous Goods regulations.

SARA Title III: Section 302/304. Extremely Hazardous Substances - None.
Section 311. Hazardous Substances - Not Applicable.
Section 313. This product is not subject to reporting requirements.

CEPA: Components of these products are included in Canada's DSL.

EC: Aromatic Petroleum Oils are considered carcinogenic by the European Community.

WHMIS: This product is considered a Controlled Product under the Canada's Workplace Hazardous Materials Information System because it contains less than 2.3% by weight Oleic acid, CAS number 112-80-1 (a component of Disproportionated Tall Oil) (See Note 6):

COMPONENT	LD50	LC50	Hazard
Oleic Acid	74 g/kg (rat, oral)	NE	Skin Irritant
Carbon Black	6.2 mg/kg (mouse inhalation)	NE	Inhalation
Aromatic Petroleum Oil 5 - 15 mg/kg (rat, oral)		NE	Carcinogen

7. TOXICOLOGY AND HEALTH DATA

Medical Conditions Aggravated by Exposure: Some individuals with specific sensitivities may exhibit eye, nose, throat or thermal irritation with prolonged exposure to processing fumes. Individuals with pre-existing skin disorders should avoid contact with this material.

Specific Hazard: No acute or chronic hazards or effects are known in the final product.

Routes of Exposure:

Eye Contact: Not a probable route of exposure. Particulates may scratch eye surface or cause mild irritation.

Skin Contact: A single prolonged exposure is not likely to result in material being absorbed through the skin in harmful amounts. Repeated, prolonged exposure may cause mild skin irritation in some individuals and possible increased risk of skin cancer. Exposure to hot material may cause thermal burns.

Ingestion: Not a probable route of exposure.

Inhalation: Not a probable route of exposure under conditions of normal use. Hot fumes or vapors that may form during processing or burning can cause irritation to the respiratory tract.

Toxicology Information:

Reproductive Effects: None reported

Mutagenicity: None reported

LD50 = NE

LC50 = NA

Tetragenicity: None reported.

Carcinogenicity: The aromatic petroleum component in this product is a carcinogen according to IARC

Other: Skin irritant – Oleic acid 15mg/3D-1 (human) Moderate (see note 6)

Aromatic petroleum oil 3.5/8.0 (rabbit) Moderate

8. EMERGENCY AND FIRST AID PROCEDURES

Eye Contact: Remove as for any foreign object. Flush with clean water for 15 minutes. Obtain medical attention if irritation persists.

Skin Contact: Wash with soap and water. If thermal irritation, flush affected area with cold water to dissipate heat, then cover with clean cotton sheeting or gauze and get prompt medical attention.

Inhalation: If fumes/vapors are inhaled, move to fresh air, aid breathing if necessary. Obtain medical attention if irritation persists.

Ingestion: Unlikely to occur.

9. CHEMICAL REACTIVITY

Chemical Stability: Product is stable at ambient temperature and pressure.

Conditions to Avoid: High temperature, 300°-350°C(572°-662°F) will cause thermal decomposition; ignition source.

Incompatibility with other Materials: None known.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, various hydrocarbons, silicates and partially oxidized hydrocarbons.

Hazardous Polymerization: Will not occur.

10. SPILLS, DISPOSAL, STORAGE GUIDELINES

Spill and Release Information: Repackage uncontaminated rubber. Reuse or dispose of as noted below.

Disposal Information: Reuse if possible. Material as supplied is not characterized as hazardous under RCRA. Dispose in accordance with local, state, and federal regulations and applicable environmental regulations.

Storage: Store below 35°C (95°F) in dry area and in the absence of direct, natural, or artificial light.

11. LABELS

OSHA: Required WHMIS: Required

12. NOTES TO USER

Note 1: This data represents the lowest possible limit and is for the Aromatic Petroleum Oil ingredient in this product. The Aromatic Petroleum Oil is soluble in the SBR component and data on the blend has not been established.

- Note 2:** Aromatic Petroleum Oils have caused skin tumors in laboratory animals according to reports of IARC. They contain polynuclear aromatic substances that have caused cancer in laboratory animals. It is not known whether or not the repeated, prolonged skin contact of this rubber containing the Aromatic Petroleum Oil presents a skin cancer risk to humans.
- Note 3:** OSHA 29CFR 1910.1200 and WHMIS (Canada) and many U.S. state 'Right-to-Know' legislation considers products containing 0.1% by weight or more of an ingredient known to be carcinogenic as a carcinogen, if no test data on the mixture is available.
- Note 4:** Specific exposure standards for this product and its components have not been established. The limits shown in this are suggested as minimum control guidelines based upon component parts of the product that published standards currently exist. The standards for particulate polycyclic aromatic hydrocarbon (PPAH) and coal tar pitch volatiles (CTPV) as benzene solubles are based upon coal coking and not upon the specific petroleum extract oil. These exposure limits apply only if aerosols are emitted from the product.
- Note 5:** Carbon Black, when incorporated into the rubber in the form delivered, is no longer believed to be a nuisance dust hazards by DSM Copolymer unless subjected to excessive grinding, fire or other form that may produce particulate emissions to air.
- Note 6:** Oleic Acid, CAS #112-80-1 is a component in the Tall Oils CAS #'s 61790-12-3 and 68152-92-1 and can be present at a concentration up to 2.3 weight percent.

ADDITIONAL INFORMATION, ABBREVIATIONS AND NOTICES TO USER

ACGIH:	American Conference of Governmental Industrial Hygienists	CAS:	Chemical Abstract Service
CEPA:	Canadian Environmental Protection Act	CFR:	Code of Federal Regulations
DOT:	Department of Transportation	DSL:	Domestic Substance List
EPA:	Environmental Protection Agency	NA:	Not applicable
EEC:	European Economic Community	NE:	Not established
FDA:	Food and Drug Administration (U.S.)	NH:	Not hazardous
IARC:	International Agency for Research on Cancer	PEL:	Permissible Exposure Limits
NFPA:	National Fire Protection Association	TLV:	Threshold Limit Value
RCRA:	Resource and Conservation Recovery Act	TSCA:	Toxic Substance Control Act
PPAH:	Particulate Polycyclic Aromatic Hydrocarbons	CTPV:	Coal Tar Pitch Volatiles
WHMIS:	Workplace Hazardous Material Information System		
LC50:	The concentration in air that causes death in 50% of the animals exposed		
LD50:	The dose that causes death in 50% of the animals exposed		
mg/m ³ :	Milligrams (mg) of substance per cubic meter (m ³) of air; method of expressing the concentration of a substance in air		
IATA:	International Air Transportation Association	OSHA:	Occupational Safety and Health Administration
NIOSH:	National Institute for Occupational Safety and Health Reauthorization Act	SARA:	Superfund Amendments and

NOTICE: Although the information contained in this MSDS is believed to be correct as of the date hereof, DSM Copolymer makes no representation as to the completeness or accuracy thereof. Those who utilize the product described herein are responsible for determining (a) the suitability of the product for the intended use and (b) the appropriate manner of processing the product to insure safety and quality. In no event will DSM Copolymer be responsible for damages of any nature resulting from the use of or reliance upon the information contained herein.