SAFETY DATA SHEET

Group 2- Heat Resistant SAR Cover Stock

Section 1. Identification

GHS product identifier : Group 2- Heat Resistant SAR Cover Stock
Other means of identification : Not available.
Product code : 5992
Product type : Solid.
Identified uses : Uncured rubber compound.

Supplier/Manufacturer : Fenner Dunlop
146 South Westwood
Toledo, OH 43607
Tel: (419) 534 5300 ext. 324
Fax: (419) 531-6284
Email: Dan.hoca@fennerdunlop.com

Emergency telephone number (with hours of operation) : CHEMTREC, U.S.: 1-800-424-9300
International: +1-703-527-3877
(24/7)

Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

GHS label elements

Signal word : No signal word.
Hazard statements : No known significant effects or critical hazards.

Precautionary statements

Prevention : Not applicable.
Response : Not applicable.
Storage : Not applicable.
Disposal : Not applicable.

Hazards not otherwise classified (HNOC)

Physical hazards not otherwise classified (PHNOC) : None known.
Section 2. Hazards identification

Health hazards not otherwise classified (HHNOC) : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture
Other means of identification : Not available.

CAS number/other identifiers
CAS number : Not applicable.
Product code : 5992

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>%</th>
<th>CAS number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>30 - 60</td>
<td>1333-86-4</td>
</tr>
<tr>
<td>Extracts (petroleum), heavy paraffinic distillate solvent</td>
<td>10 - 30</td>
<td>64742-04-7</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>1 - 5</td>
<td>1314-13-2</td>
</tr>
</tbody>
</table>

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention if symptoms occur.
Skin contact : Flush contaminated skin with plenty of water. Get medical attention if symptoms occur.
Ingestion : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : No known significant effects or critical hazards.
Inhalation : No known significant effects or critical hazards.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Indication of immediate medical attention and special treatment needed, if necessary
Section 4. First aid measures

Notes to physician: Treat symptomatically.
Specific treatments: No specific treatment.
Protection of first-aiders: No special protection is required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media
- Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media: None known.

Specific hazards arising from the chemical
- Decomposition products may include the following materials:
  - carbon dioxide
  - carbon monoxide
  - metal oxide/oxides

Special protective actions for fire-fighters: No special measures are required.
Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures
- For non-emergency personnel: Put on appropriate personal protective equipment.
- For emergency responders: If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up
- Spill: Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: Store between the following temperatures: 59°F (15°C) and 77°F (25°C). Keep material in a cool well ventilated area.

Section 8. Exposure controls/personal protection

Control parameters

United States

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>ACGIH TLV (United States, 3/2015). TWA: 3 mg/m³ 8 hours. Form: Inhalable fraction</td>
</tr>
<tr>
<td></td>
<td>NIOSH REL (United States, 10/2013). TWA: 3.5 mg/m³ 10 hours. TWA: 0.1 mg of PAHs/cm³ 10 hours. OSHA PEL (United States, 2/2013). TWA: 3.5 mg/m³ 8 hours.</td>
</tr>
<tr>
<td>Extracts (petroleum), heavy paraffinic distillate solvent</td>
<td>NIOSH REL (United States, 10/2013). STEL: 10 mg/m³ 15 minutes. Form: Mist TWA: 5 mg/m³ 10 hours. Form: Mist</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>NIOSH REL (United States, 10/2013). CEIL: 15 mg/m³ Form: Dust TWA: 5 mg/m³ 10 hours. Form: Dust and fumes STEL: 10 mg/m³ 15 minutes. Form: Fume OSHA PEL (United States, 2/2013). TWA: 5 mg/m³ 8 hours. Form: Fume TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust ACGIH TLV (United States, 3/2015). TWA: 2 mg/m³ 8 hours. Form: Respirable fraction STEL: 10 mg/m³ 15 minutes. Form: Respirable fraction</td>
</tr>
</tbody>
</table>

Canada

Occupational exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>TWA (8 hours)</th>
<th>STEL (15 mins)</th>
<th>Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>ppm</td>
<td>mg/m³</td>
<td>Other</td>
</tr>
<tr>
<td>US ACGIH 3/2015</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>AB 4/2009</td>
<td>-</td>
<td>3.5</td>
<td>-</td>
</tr>
<tr>
<td>BC 2/2015</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>ON 7/2015</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>QC 1/2014</td>
<td>-</td>
<td>3.5</td>
<td>-</td>
</tr>
<tr>
<td>AB 4/2009</td>
<td>-</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Extracts (petroleum), heavy paraffinic distillate solvent</td>
<td>ON 7/2015</td>
<td>-</td>
<td>5</td>
</tr>
<tr>
<td>QC 1/2014</td>
<td>-</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td>US ACGIH 3/2015</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>AB 4/2009</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>BC 2/2015</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>ON 7/2015</td>
<td>-</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>QC 1/2014</td>
<td>-</td>
<td>5</td>
<td>-</td>
</tr>
</tbody>
</table>


Mexico

Tel : +1-888-GHS-7769 (447-7769) / +1-450-GHS-7767 (447-7767)
Section 8. Exposure controls/personal protection

### Ingredient name

**Carbon black**

**Exposure limits**

NOM-010-STPS (Mexico, 9/2000).
- LMPE-CT: 7 mg/m³ 15 minutes. Form: smoke
- LMPE-PPT: 3.5 mg/m³ 8 hours. Form: smoke

**Extracts (petroleum), heavy paraffinic distillate solvent**

NOM-010-STPS (Mexico, 9/2000).
- LMPE-CT: 10 mg/m³ 15 minutes. Form: Mist
- LMPE-PPT: 5 mg/m³ 8 hours. Form: Mist

**Zinc Oxide**

NOM-010-STPS (Mexico, 9/2000).
- LMPE-PPT: 10 mg/m³ 8 hours. Form: Powder
- LMPE-PPT: 5 mg/m³ 8 hours. Form: smoke
- LMPE-CT: 10 mg/m³ 15 minutes. Form: smoke

### Appropriate engineering controls

Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

### Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

#### Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.

#### Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

#### Skin protection

**Hand protection**

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection**

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection**

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection**

Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

### Exposure limits

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td></td>
</tr>
<tr>
<td>Exports (petroleum), heavy paraffinic distillate solvent</td>
<td></td>
</tr>
<tr>
<td>Zinc Oxide</td>
<td></td>
</tr>
</tbody>
</table>

### Section 9. Physical and chemical properties

**Appearance**

**Physical state**

Solid. [Rubber.]

**Color**

Black.

**Odor**

Aromatic. [Slight]

**Odor threshold**

Not available.

**pH**

Not available.

**Melting point**

Not available.

**Boiling point**

Not available.

**Flash point**

Not available.

**Evaporation rate**

Not available.

**Flammability (solid, gas)**

Not available.
Section 9. Physical and chemical properties

Lower and upper explosive (flammable) limits : Not available.
Vapor pressure : Not available.
Vapor density : Not available.
Relative density : 1.156
Solubility : Insoluble in water.
Partition coefficient: n-octanol/water : Not available.
Auto-ignition temperature : >246°C (>474.8°F)
Decomposition temperature : Not available.
Viscosity : Not available.
Volatile : Not available.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.
Chemical stability : The product is stable.
Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid : No specific data.
Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;15400 mg/kg</td>
<td>-</td>
</tr>
</tbody>
</table>

Irritation/Corrosion

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Score</th>
<th>Exposure</th>
<th>Observation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>Eyes - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin - Mild irritant</td>
<td>Rabbit</td>
<td>-</td>
<td>24 hours 500 mg</td>
<td></td>
</tr>
</tbody>
</table>

Sensitization

There is no data available.

Carcinogenicity

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>OSHA</th>
<th>IARC</th>
<th>NTP</th>
<th>ACGIH</th>
<th>EPA</th>
<th>NIOSH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td>A3</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Extracts (petroleum), heavy paraffinic distillate solvent</td>
<td>-</td>
<td>2B</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Section 11. Toxicological information

Specific target organ toxicity (single exposure)
There is no data available.

Specific target organ toxicity (repeated exposure)
There is no data available.

Aspiration hazard
There is no data available.

Information on the likely routes of exposure
- Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects
- Eye contact: No known significant effects or critical hazards.
- Inhalation: No known significant effects or critical hazards.
- Skin contact: No known significant effects or critical hazards.
- Ingestion: No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics
- Eye contact: No known significant effects or critical hazards.
- Inhalation: No known significant effects or critical hazards.
- Skin contact: No known significant effects or critical hazards.
- Ingestion: No known significant effects or critical hazards.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure
- Potential immediate effects: No known significant effects or critical hazards.
- Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
- Potential immediate effects: No known significant effects or critical hazards.
- Potential delayed effects: No known significant effects or critical hazards.
- Potential chronic health effects
  - General: No known significant effects or critical hazards.
  - Carcinogenicity: Carbon black contained in this material is totally bounded, so cannot be inhaled under any normal circumstances of uses.
  - Mutagenicity: No known significant effects or critical hazards.
  - Teratogenicity: No known significant effects or critical hazards.
  - Developmental effects: No known significant effects or critical hazards.
  - Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates
There is no data available.
Section 12. Ecological information

Toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>Acute EC50 0.042 mg/L Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 98 µg/L Fresh water</td>
<td>Daphnia - Daphnia magna - Neonate</td>
<td>48 hours</td>
</tr>
<tr>
<td></td>
<td>Acute LC50 1.1 ppm Fresh water</td>
<td>Fish - Oncorhynchus mykiss</td>
<td>96 hours</td>
</tr>
<tr>
<td></td>
<td>Chronic NOEC 0.017 mg/L Fresh water</td>
<td>Algae - Pseudokirchneriella subcapitata - Exponential growth phase</td>
<td>72 hours</td>
</tr>
</tbody>
</table>

Persistence and degradability

There is no data available.

Bioaccumulative potential

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>LogP_{ow}</th>
<th>BCF</th>
<th>Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinc oxide</td>
<td>-</td>
<td>60960</td>
<td>high</td>
</tr>
</tbody>
</table>

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Zinc oxide contained in this material is totally bounded, so cannot be release in the environment under any normal circumstances of uses.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Incineration or landfill should only be considered when recycling is not feasible.

Section 14. Transport information

<table>
<thead>
<tr>
<th>DOT</th>
<th>TDG / NOM-003-SCT</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

AERG : Not applicable.
Section 14. Transport information

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: United States inventory (TSCA 8b): All components are listed or exempted.

Clean Water Act (CWA) 307: Zinc oxide
Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs): Not listed

Clean Air Act Section 602 Class I Substances: Not listed

Clean Air Act Section 602 Class II Substances: Not listed

DEA List I Chemicals (Precursor Chemicals): Not listed

DEA List II Chemicals (Essential Chemicals): Not listed

SARA 302/304
Composition/information on ingredients
No products were found.

SARA 304 RQ: Not applicable.

SARA 311/312
Classification: Not applicable.

Composition/information on ingredients

<table>
<thead>
<tr>
<th>Name</th>
<th>%</th>
<th>Fire hazard</th>
<th>Sudden release of pressure</th>
<th>Reactive</th>
<th>Immediate (acute) health hazard</th>
<th>Delayed (chronic) health hazard</th>
</tr>
</thead>
</table>

SARA 313

<table>
<thead>
<tr>
<th>Product name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form R - Reporting requirements</td>
<td>Zinc oxide</td>
<td>1314-13-2</td>
</tr>
<tr>
<td>Supplier notification</td>
<td>Zinc oxide</td>
<td>1314-13-2</td>
</tr>
</tbody>
</table>

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations
Section 15. Regulatory information

Massachusetts: The following components are listed: Carbon black; Extracts (petroleum), heavy paraffinic distillate solvent; Zinc oxide

New York: None of the components are listed.

New Jersey: The following components are listed: Carbon black; Extracts (petroleum), heavy paraffinic distillate solvent; Zinc oxide

Pennsylvania: The following components are listed: Carbon black; Zinc oxide

California Prop. 65

When bonded in the material, carbon black is exempted from California proposition 65 warning statement.

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>Cancer</th>
<th>Reproductive</th>
<th>No significant risk level</th>
<th>Maximum acceptable dosage level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon black</td>
<td>Yes.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
</tbody>
</table>

Canada

Canadian lists

Canadian NPRI: The following components are listed: Zinc oxide

CEPA Toxic substances: None of the components are listed.

Canada inventory: All components are listed or exempted.

International lists

National inventory

Australia: All components are listed or exempted.

China: All components are listed or exempted.

Europe: All components are listed or exempted.

Japan: Not determined.

Malaysia: Not determined.

New Zealand: All components are listed or exempted.

Philippines: All components are listed or exempted.

Republic of Korea: All components are listed or exempted.

Taiwan: Not determined.

Section 16. Other information

History

Date of issue mm/dd/yyyy: 08/15/2015
Date of previous issue: 09/15/2014
Version: 5
Prepared by: KMK Regulatory Services Inc.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.