Product Safety Assessment

**Carbon Black Feed**


Select a Topic:

- Names
- Product Overview
- Manufacture of Product
- Product Description
- Product Uses
- Exposure Potential
- Health Information
- Environmental Information
- Physical Hazard Information
- Regulatory Information
- Additional Information
- References

**Names**

- CAS No. 68513-69-9
- Carbon black feedstock
- Residues (petroleum), steam-cracked light; heavy fuel oil
- **DOW™ carbon black feed**
- **Carbon black feed**

**Product Overview**

- Carbon black feed is a mixture of C12 and higher components rich in polyaromatic compounds. At room temperature, it is a brown, thick liquid with an objectionable odor.¹ For further details, see **Product Description**.
- Most carbon black feed is used to produce carbon black, which is used as a coloring agent in tires and road pavings.² Lesser amounts of carbon black feed are used as fuel-oil blending stocks or as a source for recovery of polyaromatic compounds.¹ For further details, see **Product Uses**.
- Dow does not sell carbon black feed for direct consumer use. Consumer contact with carbon black feed is extremely unlikely.¹ For further details, see **Exposure Potential**. Carbon black feed may cause slight eye irritation or slight temporary corneal injury. Prolonged contact may cause moderate skin irritation with local redness, but is unlikely to result in absorption of harmful amounts. This material has low toxicity if swallowed. However, aspiration into the lungs could occur during ingestion or vomiting, with the potential for lung damage. The potential for exposure to vapor is minimal due to low volatility. However, inhalation of heated vapors may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat) and lungs. Based on information for the components, effects in humans have been reported on the central nervous system, liver, and peripheral nervous system. Some components of this material have caused cancer in laboratory animals. However, the relevance of these cancers to humans is not known.¹ For further details, see **Health Information**.
- Carbon black feed is a blend of components. Many of the components of carbon black feed will biodegrade in the environment. The components of carbon black feed have a moderate to high bioconcentration potential (tendency to accumulate in the food chain), and this material

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Product Safety Assessment: Carbon Black Feed

is toxic to fish and other aquatic organisms. For further details, see Environmental Information.

- Carbon black feed is thermally stable; however, elevated temperatures can cause the material to decompose. Avoid contact with oxidizing materials.\textsuperscript{1} For further details, see Physical Hazard Information.

Manufacture of Product

- **Capacity** – Dow produces carbon black feed at its petrochemical processing site at Terneuzen, The Netherlands; Tarragona, Spain; and Boehlen, Germany.
- **Process**\textsuperscript{2} – carbon black feed is recovered as a by-product from the high-temperature cracking of petroleum fractions.

Product Description\textsuperscript{1,2}

Carbon black feed is a mixture of C12 and higher components that is rich in naphthalene (10–20%), methyl-indenes (<7%), anthracene, fluorene, and other polyaromatic compounds. The exact composition will vary with operating conditions and what petroleum feedstock is being used in the cracking furnace. At room temperature, it is a thick, brown liquid with an objectionable odor.

Product Uses\textsuperscript{1,2,3}

Most carbon black feed is used to produce carbon black, a widely used filler and reinforcing material in rubber compositions used for tires, hoses, belts, and gaskets; as black pigment for road markings and inks; or as conductive agents. Lesser amounts of carbon black feed are used as fuel-oil blending stocks or as a source for recovery of polyaromatic compounds such as naphthalene, biphenyl, fluorene, and anthracene.

Exposure Potential\textsuperscript{1}

Most carbon black feed is used in the production of carbon black. Based on this use, the public could be exposed through:

- **Workplace exposure** – Exposure can occur either in a petrochemical processing facility or in the various industrial or manufacturing facilities that use carbon black feed. It is produced, distributed, stored, and consumed in closed systems. Those working with carbon black feed in manufacturing operations could be exposed during maintenance, sampling, testing, or other procedures. Each manufacturing facility should have a thorough training program for employees and appropriate work processes, ventilation, and safety equipment in place to limit unnecessary exposure. See Health Information.

- **Consumer exposure to products containing carbon black feed** – Dow does not sell carbon black feed for direct consumer use, but it is used as a raw material to make carbon black, which in turn is used to produce products that would be handled by consumers. However, consumer contact with any residual carbon black feed is extremely unlikely. See Health Information.

- **Environmental releases** – In the event of a spill, the focus is on containing the spill to prevent contamination of soil and surface or ground water. Eliminate all sources of ignition immediately. Respiratory protection is necessary for cleaning up spills and leaks. For small spills, carbon black feed should be absorbed with materials such as sand. This material is toxic to aquatic organisms. See Environmental, Health, and Physical Hazard Information.
• Large release – Industrial spills or releases are infrequent and generally contained. If a large spill does occur, the material should be captured, collected, and reprocessed or disposed of according to applicable governmental requirements. This material will float on the surface of water and can be a vapor explosion hazard if confined. Keep this material out of sewers. Eliminate all sources of ignition immediately. Use only explosion-proof equipment and ground and bond all containers and handling equipment. Positive-pressure, self-contained breathing apparatus (SCBA) with an approved full-face mask is recommended for emergency work. See Environmental, Health, and Physical Hazard Information.

• In case of fire – Deny any unnecessary entry into the area and consider the use of unmanned hose holders. Use water spray or fog, carbon-dioxide or dry-chemical extinguishers, or foam to fight the fire. General-purpose foams or protein-based foams are preferred. Use of a direct water stream may spread the fire. Firefighters should wear positive-pressure, self-contained breathing apparatus (SCBA) and protective firefighting clothing. Follow emergency procedures carefully. See Environmental, Health, and Physical Hazard Information.

For more information, see the relevant Safety Data Sheet.

Health Information

Eye contact – Eye contact with carbon black feed may cause slight irritation or slight temporary corneal injury.

Skin contact – Prolonged contact may cause moderate skin irritation with local redness, but is unlikely to result in absorption of harmful amounts. Skin sensitization studies in animals have been negative.

Ingestion – This material has low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury. However, larger amounts may cause injury. Aspiration into the lungs could occur during ingestion or vomiting, with the potential for lung damage or even death due to chemical pneumonia.

Inhalation – Room temperature exposure to vapor is minimal due to low volatility. However, inhalation of heated vapors may cause serious adverse effects, even death. Excessive exposure can cause irritation to upper respiratory tract (nose and throat) and lungs, headache, dizziness, drowsiness and lack of coordination.

Repeated exposure – Based on information for the components, effects in humans have been reported on the central nervous system, liver, and peripheral nervous system. Effects in animals have been reported in the kidneys, liver, and spleen. Excessive exposure may cause hemolysis, impairing the blood’s ability to transport oxygen. Cataracts and other eye effects have been reported in humans exposed repeatedly to vapor or dust.

Other – Some components of this material have caused cancer in laboratory animals. However, the relevance of these cancers to humans is not known. Effects on reproduction have only been seen at doses toxic to the mother.

For more information, see the relevant Safety Data Sheet.
Environmental Information
Components of carbon black feed have a range of vapor pressure and are moderately to poorly soluble in water. If released to water, some of the components will have a tendency to evaporate while other components are expected to have a moderate to high potential to bind to soils and sediments.

Many of the components of carbon black feed will biodegrade in the environment.

Carbon black feed shows a moderate to high potential for bioconcentration (tendency to accumulate in the food chain), and it is toxic to aquatic organisms on an acute basis with long lasting effects.

For more information, see the relevant Safety Data Sheet.

Physical Hazard Information
Carbon black feed is thermally stable at typical storage and use conditions. However, exposure to elevated temperatures can cause the material to decompose. Avoid contact with oxidizing materials.

For more information, see the relevant Safety Data Sheet.

Regulatory Information
Regulations may exist that govern the manufacture, sale, transportation, use, and/or disposal of carbon black feed. These regulations may vary by city, state, country, or geographic region. Information may be found by consulting the relevant Safety Data Sheet, Technical Data Sheet, or Contact Us.

Additional Information
- Safety Data Sheet (http://www.dow.com/webapps/msds/msdssearch.aspx)
- Contact Us (http://www.dow.com/aromatics/contact/index.htm)

For more business information about carbon black feed, visit the Dow Aromatics Co-Products web site at www.dow.com/aromatics/prod/other_carbon.htm.
References

1. Carbon Black Feedstock, Safety Data Sheet, The Dow Chemical Company,

Back to top
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Back to top