



The Steel Company of Canada

Coke Oven Gas Pipeline Residue

Safety Data Sheet (SDS)

Section 1 – Identification

- 1(a) Product Identifier Used on Label:** Coke Oven Gas Pipeline Residue
- 1(b) Other Means of Identification:** Coke Oven Gas Line Sludge, Coke Oven Gas Line Cleaning Sludge, Moon Dust
- 1(c) Recommended Use of the Chemical and Restrictions on Use:** None
- 1(d) Name, Address, and Telephone Number:**
 Stelco Inc.
 386 Wilcox Street
 Hamilton, ON L8L 8K5
 Phone number: (905) 528-2511 (8:00 am to 5:00 pm)
- 1(e) Emergency Phone Number:** 1-888-CAN-UTEC (226-8832) or 613-996-6666

Section 2 – Hazard(s) Identification

2(a) Classification of the Chemical: Coke Oven Gas Pipeline Residue is considered a hazardous material according to the criteria specified in the Canadian Hazardous Products Regulations. The categories of Health Hazards as defined in “GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)”, have been evaluated. Refer to Section 3, 8 and 11 for additional information.

2(b) Signal Word, Hazard Statement(s), Symbols and Precautionary Statement(s):

Hazard Symbol	Hazard Classification	Signal Word	Hazard Statement(s)	Precautionary Statement(s)
	Acute Toxicity-Oral - 3	Danger	Toxic if swallowed. Causes severe skin burns and eye damage.	Do not breathe dusts or fume.
	Skin Irritation - 1B		May cause cancer. May cause genetic defects.	Wear protective gloves/protective clothing/eye protection /face protection.
	Carcinogenicity - 1A Germ Cell Mutagenicity - 1B Reproductive Toxicity - 1B Specific Target Organ Toxicity (STOT) Single Exposure -1 STOT Repeated Exposure - 1		May damage fertility or the unborn child.	Wash hands thoroughly after handling. Obtain, read and follow all safety instructions before use.
	Eye Irritation - 2A		Causes serious eye irritation. Causes central nervous system depression, respiratory irritation, drowsiness or dizziness and damage to lungs, liver and blood cells.	Do not eat, drink or smoke when using this product. If exposed, concerned or feel unwell: Get emergency medical help/advice immediately.
None	Combustible Dust - 1		Causes damage to blood and blood forming system through prolonged or repeated exposure. Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure. May form combustible dust concentrations in air.	If inhaled: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately. If in eyes: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical help. If on skin: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes. Wash contaminated clothing before reuse. If swallowed: Get emergency medical help immediately. Rinse mouth. Do NOT induce vomiting. Store locked up. Dispose of contents in accordance with federal, provincial, state and local regulations.

2(c) Hazards Not Otherwise Classified: None Known

2(d) Unknown Acute Toxicity Statement (mixture): None Known

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Section 3 – Composition/Information on Ingredients

3(a-c) Chemical Name, Common Name (Synonyms), CAS Number and Other Identifiers, and Concentration:

Chemical Name	CAS Number	% weight
Sulphur	7704-34-9	40-55
Iron	7439-89-6	5-15
Ammonia	7664-41-7	1-5
Cyanide (as hydrogen cyanide and/or salts)	57-12-5	0.1-4
Crystalline Silica (as Quartz)	14808-60-7	0-1
Benzene	71-43-2	0-0.5

CAS- Chemical Abstract Service

Section 4 – First-aid Measures

4(a) Description of Necessary Measures: If exposed, concerned or feel unwell: Get medical advice/attention.

- **Inhalation:** Remove person to fresh air and keep comfortable for breathing. Immediately call a poison center or doctor.
- **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice attention.
- **Skin Contact:** If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.
- **Ingestion:** Immediately call a poison center or doctor. Rinse mouth. Do NOT induce vomiting.

4(b) Most Important Symptoms/Effects, Acute and Delayed (Chronic):

Acute Effects:

- **Inhalation:** Excessive exposure to high concentrations of dust may cause irritation to the eyes, skin and mucous membranes of the upper respiratory tract.
- **Eye:** Excessive exposure to high concentrations of dust may cause irritation to the eyes. Particles of iron or iron compounds may become imbedded in the eye.
- **Skin:** Skin contact with dusts may cause irritation or sensitization, possibly leading to dermatitis. Skin contact with fumes and dusts may cause physical abrasion.
- **Ingestion:** Ingestion of dust may cause nausea and/or vomiting.

Chronic Effects:

Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema, etc.) may be adversely affected by any fume or airborne particulate matter exposure. Persons with pre-existing skin disorders may be more susceptible to dermatitis.

4(c) Immediate Medical Attention and Special Treatment: Treat symptomatically.

Section 5 – Fire-fighting Measures

5(a) Suitable (and unsuitable) Extinguishing Media: Use extinguishers appropriate for surrounding materials.

5(b) Specific Hazards Arising from the Chemical: When burned, toxic smoke and vapor may be emitted. **Coke Oven Gas Pipeline Residue** may form combustible mixtures in the air.

5(c) Special Protective Equipment and Precautions for Fire-fighters: Self-contained NIOSH-approved respiratory protection and full protective clothing should be worn when fumes and/or smoke from fire are present. Heat and flames cause emittance of acrid smoke and fumes. Do not release runoff from fire control methods to sewers or waterways. Firefighters should wear full face-piece self-contained breathing apparatus and chemical protective clothing with thermal protection. Direct water stream will scatter and spread flames and, therefore, should not be used.

Section 6 - Accidental Release Measures

6(a) Personal Precautions, Protective Equipment and Emergency Procedures: Use only outdoors or in a well-ventilated area. For spills involving finely divided particles, clean-up personnel should be protected against contact with eyes and skin. If material is in a dry state, avoid inhalation of dust. Personnel should be protected against contact with eyes and skin. Fine, dry material should be removed by vacuuming or wet sweeping methods to prevent spreading of dust. Avoid using compressed air. Do not release into sewers or waterways. Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, provincial and local regulations.

6(b) Methods and Materials for Containment and Clean Up: Collect material in appropriate, labeled containers for recovery or disposal in accordance with federal, provincial, and local regulations.

Section 7 - Handling and Storage

7(a) Precautions for Safe Handling: Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Do not breathe dusts or fume. Wear protective gloves/protective clothing/eye protection/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid direct contact on skin, eyes or on clothing. Emergency safety showers and eye wash stations should be present.

7(b) Conditions for Safe Storage, including any incompatibilities: Store locked up.

Section 8 - Exposure Controls/Personal Protection

8(a) Occupational Exposure Limits (OELs): The following exposure limits are offered as reference, for an experienced industrial hygienist to review.

Ingredients	Ontario TWA ¹	ACGIH TLV ²	NIOSH REL ³	IDLH ⁴
Sulphur	10 mg/m ³ (as inhalable fraction ⁵ , PNOS ⁷) 3.0 mg/m ³ (as respirable fraction ⁶ , PNOS ⁷)	10 mg/m ³ (as inhalable fraction ⁵ , PNOS ⁷) 3.0 mg/m ³ (as respirable fraction ⁶ , PNOS ⁷)	NE	NE
Iron	5.0 mg/m ³ (as iron oxide dust and fume, respirable fraction ⁶)	5.0 mg/m ³ (as iron oxide dust and fume, respirable fraction ⁶)	5.0 mg/m ³ (as iron oxide dust and fume)	2,500 mg Fe/m ³
Ammonia	25 ppm “STEL” 35 ppm	25 ppm “STEL” 35 ppm	25 ppm “STEL” 35 ppm	300 ppm
Cyanide	Hydrogen cyanide 4.7 ppm C, (as CN) 5 mg/m ³ C cyanide salts, (as CN)	Hydrogen cyanide 4.7 ppm C, (as CN) 5 mg/m ³ C cyanide salts, (as CN)	Hydrogen cyanide 4.7 ppm C, (as CN) 5 mg/m ³ C cyanide salts, (as CN)	25 mg/m ³ as CN
Crystalline Silica (as Quartz)	0.10 mg/m ³ (as respirable fraction ⁶)	0.025 mg/m ³ (respirable fraction ⁸ , all forms)	0.05 mg/m ³	50 mg/m ³
Benzene	0.5 ppm, skin “STEL” 2.5 ppm	0.02ppm, skin	0.1 ppm “STEL” 1.0 ppm	500 ppm

NE - None Established

1. Time-Weighted Average (TWA) limits established by the Ontario Ministry of Labour are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. C or ceiling limit means the maximum airborne concentration of an agent to which a worker may be exposed at any time.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. ACGIH TLVs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes. A Short Term Exposure Limit (STEL) is defined as the maximum concentration to which workers can be exposed for a short period of time (15 minutes) for only four times throughout the day with at least one hour between exposures. The C or ceiling is the concentration that should not be exceeded during any part of the working exposure.
3. The National Institute for Occupational Safety and Health Recommended Exposure Limits (NIOSH-REL) Compendium of Policy and Statements. NIOSH, Cincinnati, OH (1992). NIOSH is the U.S. federal agency designated to conduct research relative to occupational safety and health. As is the case with ACGIH TLVs, NIOSH RELs are for guideline purposes only and as such are not legal, regulatory limits for compliance purposes.
4. The “immediately dangerous to life or health air concentration values (IDLHs)” are used by NIOSH as part of the respirator selection criteria and were first developed in the mid-1970’s by NIOSH. The Documentation for Immediately Dangerous to Life or Health Concentrations (IDLHs) is a compilation of the rationale and sources of information used by NIOSH during the original determination of 387 IDLHs and their subsequent review and revision in 1994.
5. Inhalable fraction. The concentration of inhalable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs® and BEIs® based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices – as cited by Ministry of Labour (MOL) R.R.O. 833/90.
6. Respirable fraction. The concentration of respirable particulate for the application of this TLV is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs® and BEIs® based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices – as cited by Ministry of Labour (MOL) R.R.O. 833/90.
7. PNOS. Particles (Insoluble or Poorly Soluble) Not Otherwise Specified defined in the ACGIH TLVs® and BEIs® based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices – as cited by Ministry of Labour (MOL) R.R.O. 833/90.

8(b) Appropriate Engineering Controls: Local exhaust ventilation should be used to control the emission of air contaminants. General dilution ventilation may assist with the reduction of air contaminant concentrations. Emergency eye wash stations and deluge safety showers should be available in the work area.

8(c) Individual Protection Measures:

- **Respiratory Protection:** Seek professional advice prior to respirator selection and use. Follow CSA Standard Z94.4-11 “Selection Care and Use of Respirators” or the “NIOSH Guide to the Selection and Use of Particulate Respirators (1996)” for additional information. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen. Concentration in air of the various contaminants determines the extent of respiratory protection needed. Half-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 10 times the exposure limit. Full-face, negative-pressure, air-purifying respirator equipped with P100 filter is acceptable for concentrations up to 50 times the exposure limit. Protection by air-purifying negative-pressure and powered air respirators is limited. Use a positive-pressure-demand, full-face, supplied air respirator or self-contained breathing apparatus (SCBA) for concentrations above 50 times the exposure limit. If exposure is above the IDLH (immediately dangerous to life or health) for any of the constituents, or there is a possibility of an uncontrolled release or exposure levels are unknown, then use a positive-demand, full-face, supplied air respirator with escape bottle or SCBA.

Warning! Air-purifying respirators both negative-pressure and powered-air do not protect workers in oxygen-deficient atmospheres.

- **Eyes:** Wear appropriate eye protection to prevent eye contact. Use safety glasses with side shields or chemical goggles.
- **Skin:** Persons handling this product should wear appropriate clothing to prevent skin contact. Wear protective gloves.
- **Other Protective Equipment:** An eyewash fountain and deluge shower should be readily available in the work area.

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Section 9 - Physical and Chemical Properties

9(a) Physical State: Solid (granular)	9(j) Decomposition Temperature: ND
9(b) Colour: Dark green to black	9(k) pH: ND
9(c) Odour: Sulphur odour	9(l) Kinematic Viscosity: ND
9(d) Melting Point/Freezing Point: ND	9(m) Solubility: ND
9(e) Initial Boiling Point and Boiling Range: Coating: NA	9(n) Partition Coefficient n-octanol/water: ND
9(f) Flammability (solid, gas): Combustible	9(o) Vapor Density (Air = 1): NA
9(g) Upper/lower Flammability or Explosive Limits: NA	9(p) Relative Density: ND
9(h) Flash Point: >60°C (>140°F)	9(q) Vapor Pressure: ND
9(i) Auto-ignition Temperature: ND	9(r) Particle Characteristics: ND

NA - Not Applicable

ND - Not Determined for product as a whole

Section 10 - Stability and Reactivity

10(a) Reactivity: Not Determined (ND)
10(b) Chemical Stability: Coke Oven Gas Pipeline Residue is stable under normal storage and handling conditions.
10(c) Possibility of Hazardous Reaction: None Known
10(d) Conditions to Avoid: Storage with strong acids or calcium hypochlorite. Flames and ignition sources where dust can accumulate.
10(e) Incompatible Materials: Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.
10(f) Hazardous Decomposition Products: Toxic fumes and vapors may be released at elevated temperatures.

Section 11 - Toxicological Information

11(a-j) Information on Toxicological Effects: The following toxicity data has been determined for **Coke Oven Gas Pipeline Residue** by using the information available for its components applied to the guidance on the preparation of an SDS under the GHS requirements of WHMIS:

Hazard Classifications	Hazard Category	Hazard Symbols	Signal Word	Hazard Statement
Acute Toxicity-Oral (covers Categories 1-4)	3 ^a		Danger	Toxic if swallowed.
Skin Corrosion/Irritation (covers Categories 1A, 1B, and 2)	1B ^b		Danger	Causes severe skin burns and eye damage.
Serious Eye Damage/ Eye Irritation (covers Categories 1, 2A and 2B)	2A ^c		Warning	Causes serious eye irritation.
Germ Cell Mutagenicity (covers Categories 1A, 1B and 2)	1B ^f		Danger	May cause genetic defects.
Carcinogenicity (covers Categories 1A, 1B and 2)	1A ^g		Danger	May cause cancer.
Reproductive Toxicity (covers Categories 1A, 1B and 2)	1B ^h		Danger	May damage fertility or the unborn child.
Specific Target Organ Toxicity (STOT) Following Single Exposure (covers Categories 1-3)	1 ⁱ		Danger	May cause central nervous system depression, respiratory irritation, drowsiness or dizziness and damage to lungs, liver and blood cells.
STOT Following Repeated Exposure (covers Categories 1 and 2)	1 ^j		Danger	Causes damage to blood and blood forming system through prolonged or repeated exposure. Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.

* NR Not Rated - Available data does not meet criteria for classification.

Section 11 - Toxicological Information (continued)

11(a-j) Information on Toxicological Effects (continued):

The Toxicological data listed below are presented regardless to classification criteria. Individual hazard classification categories where the toxicological information has met or exceeded a classification criteria threshold are listed above.

- a. No LC₅₀ or LD₅₀ has been established for **Coke Oven Gas Pipeline Residue**. The following data has been determined for the components:
 - **Sulphur:** LD₅₀ = 2500 mg/kg (Oral/Rabbit)
 - **Ammonia:** LD₅₀ = 350 mg/kg (Oral/Rat), LC₅₀ = 13770 mg/m³ (Inhalation/Rat), LC₅₀ = 2000 ppm (Inhalation/Rat) (IUCLID)
 - **Silica(as Quartz):** LD₅₀ = 500 mg/kg (Inhalation/Rat) (IUCLID)
 - **Iron:** LD₅₀ = 1060 mg/kg (Oral/Rat)
 - **Cyanide:** LD₅₀ = 3.62 mg/kg (Oral/rat), LD₅₀ = < 29 mg/kg (Dermal/rabbit), LC₅₀ = < 68 mg/m³ (Inhalation/rat)
 - **Benzene:** LD₅₀ 3.8 (2.9-4.8) and 5.6 (4.0-7.8) ml/kg young and old resp (Oral/rat), LD₅₀ > 9.4 ml/kg (abraded skin)(Dermal/rabbit), LC₅₀ > 13700ppm (Inhalation/female rat)
- b. No Skin (Dermal) Irritation data available for **Coke Oven Gas Pipeline Residue** as a mixture. The following Skin (Dermal) Irritation data has been determined for the components:
 - **Sulphur:** Rabbit irritation, edema and erythema 4 at 72 hours all resolved by day 7. (REACH)
 - **Ammonia:** Corrosive and irritating.
 - **Benzene:** Irritating to the skin.
- c. No Eye Irritation data available for **Coke Oven Gas Pipeline Residue** as a mixture. The following Eye Irritation information was found for the components:
 - **Iron:** Rabbit draize - irritating (IUCLID).
 - **Silica(as Quartz):** Crystalline silica may cause abrasion of the cornea.
 - **Benzene:** Irritating to the eyes.
- d. No Skin (Dermal)/Respiratory Sensitization data available for **Coke Oven Gas Pipeline Residue** as a mixture or its individual components.
- e. No Aspiration Hazard data available for **Coke Oven Gas Pipeline Residue** as a mixture or its individual components.
- f. No Germ Cell Mutagenicity data available for **Coke Oven Gas Pipeline Residue** as a mixture. The following Germ Cell Mutagenicity information was found for the components:
 - **Benzene:** Positive In vitro and In vivo clastogenicity results.
- g. Carcinogenicity: IARC, NTP, and OSHA do not list **Coke Oven Gas Pipeline Residue** as carcinogens. The following Carcinogenicity information was found for the components:
 - **Silica(as Quartz):** Repeated exposure to crystalline silica causes lung cancer in exposed humans. IARC-1, NTP-1, TLV-A2, and OSHA.
 - **Benzene:** ACGIH, OSHA, IARC, and NTP consider the Benzene (the major component of Light Oil) to be a known human carcinogen. Case reports and cohort studies have suggested a relationship between overexposures to Benzene and the occurrence of various types of leukemia.
- h. No Reproductive Toxicity data available for **Coke Oven Gas Pipeline Residue** as a mixture. The following Reproductive Toxicity information was found for the components:
 - **Benzene:** Both reproductive and teratogenicity positive results found.
- i. No Specific Target Organ Toxicity (STOT) following a Single Exposure data available for **Coke Oven Gas Pipeline Residue** as a mixture. The following STOT following a Single Exposure data was found for the components:
 - **Anhydrous Ammonia:** Bradypnea (abnormally slow breathing), bradycardia (abnormally slow heart rate), changes in serum enzyme levels, histological changes in the lung.
 - **Cyanide:** Causes headache dizziness, abnormal heart rhythms (arrhythmia), loss of consciousness, coma and death.
 - **Benzene:** Central and peripheral nervous system Depression, lung, liver (vacuolated hepatocytes) and red blood cells. Mild to moderate respiratory tract irritation expected with breathing vapors.
- j. No Specific Target Organ Toxicity (STOT) following Repeated Exposure data was available for **Coke Oven Gas Pipeline Residue** as a whole. The following STOT following Repeated Exposure data was found for the components:
 - **Anhydrous Ammonia:** Eye irritation, corneal opacities, and diffuse lung inflammation.
 - **Cyanide:** Dermatitis, skin ulcers, nose bleeds, dizziness, confusion, kidney damage, CNS damage, and possible thyroid, liver and spleen damage.
 - **Silica(as Quartz):** Repeated exposure to crystalline silica causes silicosis and kidney damage as well as increased incidence of autoimmune disorders in humans.
 - **Benzene:** Hematopoietic system, spleen, and liver damage. Induced blood dyscrasias in humans were characterized by erythrocytic anisocytosis and poikilocytosis, anemia, decreased hemoglobin, and reduced hematocrit. In addition, benzene is a human carcinogen.

The above toxicity information was determined from available scientific sources to illustrate the prevailing posture of the scientific community. The scientific resources includes: The American Conference of Governmental Industrial Hygienist (ACGIH) Documentation of the Threshold Limit Values (TLVs) and Biological Exposure indices (BEIs) with Other Worldwide Occupational Exposure Values 2017, The International Agency for Research on Cancer (IARC), The National Toxicology Program (NTP) updated documentation, the World Health Organization (WHO) and other available resources, the International Uniform Chemical Information Database (IUCLID), European Union Risk Assessment Report (EU-RAR), Concise International Chemical Assessment Documents (CICAD), European Union Scientific Committee for Occupational Exposure Limits (EU-SCOEL), Agency for Toxic Substances and Disease Registry (ATSDR), Hazardous Substance Data Bank (HSDB), and International Programme on Chemical Safety (IPCS).

Section 11 - Toxicological Information (continued)

11(a-j) Information on Toxicological Effects (continued):

The following health hazard information is provided regardless to classification criteria and is based on the individual component(s):

Acute Effects by Component:

- **Sulphur:** Sulphur is harmful if swallowed, causes skin and eye irritation.
- **Iron:** Upon inhalation, iron is an irritant to the lungs and gastrointestinal tract. The settling of iron particles in the eye results in siderosis. The extent of siderosis is affected by the location of the deposition. Deposition in the cornea results in a "rust ring" surrounding the area, which is associated with discomfort, hyperemia of the conjunctiva, and the influx of inflammatory cells.
- **Ammonia:** Ammonia produces corrosive burns. Injury is dependent upon duration of exposure and ammonia concentration. Injury varies from mild edema and erythema to severe burns and life-threatening pulmonary edema.
- **Cyanides:** Fatal if swallowed, in contact with skin or inhaled. Causes irritation to skin and eyes. Can be absorbed through the skin. Causes headache, dizziness, abnormal heart rhythms (arrhythmia), loss of consciousness, coma and death.
- **Silica(as Quartz):** Causes irritation and inflammation of the respiratory tract. May cause abrasion of the cornea. Inhalation may cause cough. A single exposure to very high airborne levels may cause lung irritation in exposed humans
- **Benzene** - Excessive exposures may cause irritation to eyes, skin, nose, throat, lungs, and respiratory tract. Central nervous system effects may occur due to excessive exposures. Excessive exposures may result in headaches, nausea, sleep disturbances, excitability, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

Delayed (chronic) Effects by Component:

- **Sulphur:** Sulphur compounds, present in the fumes, may irritate the skin, eyes, lungs and gastrointestinal tract. May cause damage to the lung from prolonged or repeated exposure, sulphur dioxide vapor is irritating to the respiratory tract and can cause lung damage with repeated or prolonged exposure.
- **Iron:** Iron dust may induce interstitial lung disease
- **Ammonia:** Prolonged or repeated exposures may result in respiratory disorders. Chronic obstructive pulmonary disease may also develop from fibrous obstruction of the smaller airways. Repeated exposure may cause chronic cough, bronchitis, asthma, vocal cord dysfunction, reactive airways disease, and lung fibrosis. A permanent decrement in pulmonary function has been noted to occur.
- **Cyanides:** Repeat contact causes dermatitis, skin ulcers, nose bleeds, dizziness, confusion, kidney damage, CNS damage, and possible thyroid, liver and spleen damage.
- **Silica (Crystalline Quartz):** Inhalation of quartz is classified by IARC as a probable human carcinogen. Chronic exposure can cause Silicosis, a form of lung scarring that can cause shortness of breath, reduced lung function, and in severe cases, death. Repeated exposure may cause kidney damage as well as increased incidence of autoimmune disorder.
- **Benzene:** IARC Group I- Human Cancer Hazard. Early signs and symptoms of chronic overexposure include effects on CNS and the GI tract (headache, loss of appetite, drowsiness, nervousness, and pallor) but the major manifestation of toxicity is aplastic anemia. Bone marrow depression may occur resulting in leucopenia, anemia, or thrombocytopenia (leukemogenic action). With continued overexposure the disease states may progress to pancytopenia resulting from bone marrow aplasia. Evidence has linked benzene in the etiology of leukemia.

Section 12 - Ecological Information

12(a) Ecotoxicity (aquatic & terrestrial): No data available for the product, **Coke Oven Gas Pipeline Residue** as a whole. However, individual components of the product have been found to be toxic to the environment. Dusts may migrate into soil and groundwater and be ingested by wildlife as follows:

- **Anhydrous Ammonia:** LC₅₀ (fat head minnow) = 1 - 1.5 ppm LC₅₀ (invertebrates) = 25.4 mg/L
- **Cyanide:** LC₅₀ (fish) = <0.113 mg/L
- **Benzene:** LC₅₀ Lepomis macrochirus (bluegill sunfish) 20 mg/l/24 to 48 hr /Conditions of bioassay not specified/; LC₅₀ Salmo trutta (brown trout yearlings) 12 mg/l/1 hr (static bioassay).

12(b) Persistence & Degradability: No Data Available

12(c) Bioaccumulative Potential: No Data Available

12(d) Mobility (in soil): No Data Available

12(e) Other Adverse Effects: None Known

Additional Information:

Hazard Category: Acute 1, Chronic 2

Signal Word: Warning



Hazard Symbol:

Hazard Statement: Very toxic to aquatic life with long lasting effects.

Section 13 - Disposal Considerations

Disposal: Dispose of contents/container in accordance with local/regional/international regulations.

Container Cleaning and Disposal: Follow applicable federal, provincial and local regulations. Observe safe handling precautions.

Please note this information is for Coke Oven Gas Pipeline Residue in its original form. Any alterations can void this information.

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Section 14 - Transport Information

14 (a-g) Transportation Information:

Transport Dangerous Goods (TDG) Classification: Coke Oven Gas Pipeline Residue has a **Transport Dangerous Goods (TDG)** classification: Environmentally hazardous substances solid (benzene), 9, II

Transport Dangerous Goods (TDG) under federal WHMIS classifies **Coke Oven Gas Pipeline Residue** as an environmentally hazardous substance solid (benzene), 9, II hazardous material. All federal, provincial and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Environmentally hazardous substance, solid, n.o.s. Class/Division: 9 Hazard Label (s): Miscellaneous UN No.: 3077 Packing Group: III Excepted Quantities (EQ): E1	ERAP Index: 3000 Special Provisions: 16, 99 Limited Quantities Index: 5 kg	Passenger Carrying Ship Index NA Passenger Carrying Road Vehicle or Passenger Carrying Railway Vehicle Index: NA
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NA – None Applicable

ERAP – Emergency Response Assistance Plan

Section 15 - Regulatory Information

Regulatory Information: *The following listing of regulations relating to a Stelco product may not be complete and should not be solely relied upon for all regulatory compliance responsibilities.*

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

Section 16 - Other Information

Prepared By: Stelco Inc.

Revision History:

08/26/2025 – Update to comply with amendments to the Hazardous Products Regulations

6/30/2017 – Update to Stelco

2/11/2014 - Update to OSHA HAZ COM 2012

01/01/1985 - Original

Section 16 - Other Information (continued)

ABBREVIATIONS/ACRONYMS:

ACGIH	American Conference of Governmental Industrial Hygienists	MOL	Ontario Ministry of Labour
BEIs	Biological Exposure Indices	NIF	No Information Found
CAS	Chemical Abstracts Service	NIOSH	National Institute for Occupational Safety and Health
CNS	Central Nervous System	NTP	National Toxicology Program
GI, GIT	Gastro-Intestinal, Gastro-Intestinal Tract	PNOR	Particulate Not Otherwise Regulated
HMIS	Hazardous Materials Identification System	PNOC	Particulate Not Otherwise Classified
IARC	International Agency for Research on Cancer	PPE	Personal Protective Equipment
LC50	Median Lethal Concentration	ppm	parts per million
LD50	Median Lethal Dose	SCBA	Self-contained Breathing Apparatus
LD_{Lo}	Lowest Dose to have killed animals or humans	STEL	Short-term Exposure Limit
LEL	Lower Explosive Limit	TLV	Threshold Limit Value
µg/m³	microgram per cubic meter of air	TWA	Time-weighted Average
mg/m³	milligram per cubic meter of air	UEL	Upper Explosive Limit
mppcf	million particles per cubic foot	WHMIS	Workplace Hazardous Materials Information System
SDS	Safety Data Sheet		

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, Stelco Inc. makes no warranty as to the absolute correctness or sufficiency of any of the foregoing or that additional or other measures may not be required under particular conditions.



The Steel Company of Canada

Coke Oven Gas Pipeline Residue

Signal Word: DANGER

Symbols:



HAZARD STATEMENTS:

Toxic if swallowed.
Causes severe skin burns and eye damage. Causes serious eye irritation.
May cause cancer.
May cause genetic defects. May damage fertility or the unborn child.
Causes central nervous system depression, respiratory irritation drowsiness or dizziness and damage to lungs, liver and blood cells.
Causes damage to blood and blood forming system through prolonged or repeated exposure. Causes damage to lungs and central nervous system through prolonged or repeated inhalation exposure.
May form explosible dust-air mixture.

PRECAUTIONARY STATEMENTS

Do not breathe dusts or fume.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash hands thoroughly after handling. Obtain, read and follow all safety instructions before use.
Do not eat, drink or smoke when using this product.
If exposed, concerned or feel unwell: Get emergency medical help/advice immediately.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Get emergency medical help immediately.
If in eyes: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical help.
If on skin: Take off immediately all contaminated clothing. Immediately rinse with water for several minutes. Wash contaminated clothing before reuse.
If swallowed: Get emergency medical help immediately. Rinse mouth. Do NOT induce vomiting.
Store locked up.
Dispose of contents in accordance with federal, provincial and local regulations.

Stelco Inc.
386 Wilcox Street
Hamilton, ON L8L 8K5
Original Issue Date: 08/01/1985

Phone Number : (905) 528-2511 (8:00 am to 5:00 pm)
Emergency Contact: 1-888-226-8832 (CANUTEC)
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