



Material Safety Data Sheet (MSDS)

Section 1 – Chemical Product and Company Identification

Product/Chemical Name: Stainless Steel (all grades) and Black Coat™ Stainless	Code Number: AKS-002
Synonyms: N/A	CAS Number: Mixture
Manufacturer: AK STEEL CORPORATION 9227 Centre Point Drive West Chester, Ohio 45069	Formerly: Stainless Steel, CS13 and MSDS162
General Information: 513 425-5000 (Information) 513 425-3815 (Health & Safety)	Original Issue Date: 10/01/1985
Customer Service Phone Number: 800 331-5050	Revised: 2/15/11

Section 2 - Composition/Information on Ingredients

Ingredient Name	CAS Number	Percentage by vol.	OSHA PEL ¹	ACGIH TLV ²
Iron	7439-89-6	48-89	10 mg/m ³ (as iron oxide fume)	5.0 mg/m ³ (as iron oxide dust and fume, as Fe)
Chromium	7440-47-3	10-27	1.0 mg/m ³ (as chromium metal) 0.5 mg/m ³ (as Cr II and Cr III) 5.0 ug/m ³ (as Cr VI) * "Action Level" 2.5 ug/m ³ (as Cr VI)	0.5 mg/m ³ (as metal & Cr III compounds) 0.05 mg/m ³ (as water soluble Cr VI compounds) 0.01 mg/m ³ (as insoluble Cr VI compounds)
Nickel	7440-02-0	0-22	1.0 mg/m ³ (as metal, soluble & insoluble compounds, as Ni)	1.5 mg/m ³ (as elemental, as Ni, inhalable fraction) 0.1 mg/m ³ (as soluble inorganic compounds inhalable fraction, NOS) ³ 0.2 mg/m ³ (as insoluble inorganic compounds inhalable fraction, NOS)
Manganese	7439-96-5	0-15	"C" 5.0 mg/m ³ (as as fume & Mn compounds)	0.2 mg/m ³ (as Mn)
Cobalt	7440-48-4	0-5	0.1 mg/m ³ (as metal, dust and fume, as Co)	0.02 mg/m ³ (as Co)
Silicon	7440-21-3	0-5	15 mg/m ³ (as total dust, PNOR) ⁴ 5.0 mg/m ³ (as respirable fraction, PNOR)	10 mg/m ³
Molybdenum	7439-98-7	0-4	5.0 mg.m ³ (as soluble compounds) 15 mg.m ³ (as insoluble compounds, total dust, PNOR)	0.5 mg/m ³ (as soluble compounds respirable fraction) ⁵ 10 mg/m ³ (as metal & insoluble compounds inhalable fraction) ⁶ 3.0 mg/m ³ (as metal & insoluble compounds respirable fraction)
Tungsten	7440-33-7	0-4	Not Established	5.0 mg/m ³ "STEL" 10 mg/m ³
Copper	7440-50-8	0-4	0.1 mg/m ³ (fume, as Cu) 1.0 mg/m ³ (dusts & mists, as Cu)	0.2 mg/m ³ (fume) 1.0 mg/m ³ (dust & mist, as Cu)
Aluminum	7429-90-5	0-2	15 mg/m ³ (as total dust, PNOR) 5.0 mg/m ³ (as respirable fraction, PNOR)	1.0 mg/m ³ (as respirable fraction)

Notes:

- All commercial steel products contain small amounts of various elements in addition to those specified. These small quantities frequently referred to as "trace" or "residual" elements, generally originate in the raw materials used and/or are alloying metals. Individual trace elements vary in concentration by weight, and may include boron, calcium, carbon, columbium (niobium), phosphorus, sulfur, titanium, and vanadium.
- Steel products may contain coating materials. The coated surface comprises <1% by weight, of the coated metal product. The coating product contains chromic acid, silica, acrylic resin coating as well as various solvents that evaporate during the application processes.
- Certain materials such as lime, alkaline salts, borax, or mineral oil used in the processing, and certain residuals (<1% total weight of product) may remain on the product's surface.
- Percentages are expressed as typical ranges or maximum concentrations for the purpose of communicating the potential hazards of the finished product. Consult product specifications for specific composition information.

* Steel products as provided contain chromium metal in the zero valence state. As such, chromium metal does not present any unusual health hazard. Hence, the most applicable exposure limits relative to chromium in these products are those established for the metal, itself. However, welding, torch cutting, brazing or perhaps grinding of the chromium metal in steel products may generate airborne concentrations of hexavalent chromium, (Cr VI), a confirmed human carcinogen. Therefore, should the user perform any of these tasks, the hexavalent chromium exposure limits would apply.

Section 2 - Composition/Information on Ingredients (continued)

1. OSHA Permissible Exposure Limits (PELs) are 8-hour TWA (time-weighted average) concentrations unless otherwise noted. A (“C”) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. A Peak is defined as the acceptable maximum peak for a maximum duration above the ceiling concentration for an eight-hour shift. A “skin” notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance.
2. Threshold Limit Values (TLV) established by the American Conference of Governmental Industrial Hygienists (ACGIH) are 8-hour TWA concentrations unless otherwise noted. A Short Term Exposure Limit (STEL) is defined as a 15-minute exposure, which should not be exceeded at any time during a workday. A (“C”) designation denotes a ceiling limit, which should not be exceeded during any part of the working exposure unless otherwise noted. A “skin” notation refers to the potential significant contribution to the overall exposure by the cutaneous route, either by contact with vapors or, of probable greater significance, by direct skin contact with the substance. ACGIH-TLV) are only recommended guidelines based upon consensus agreement of the membership of the ACGIH. As such, the ACGIH TLVs are for guideline use purposes and are not legal regulatory standards for compliance purposes. The TLVs are designed for use by individuals trained in the discipline of industrial hygiene relative to the evaluation of exposure to various chemical or biological substances and physical agents that may be found in the workplace.
3. NOS (Not Otherwise Specified). 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 Appendix D, paragraph A. Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH TLVs and BEIs Appendix D, paragraph C.
4. PNOR (Particulates Not Otherwise Regulated). All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the PNOR limit which is the same as the inert or nuisance dust limit of 15 mg/m³ for total dust and 5.0 mg/m³ for the respirable fraction (containing less than 1% crystalline silica).
5. Respirable fraction - The concentration of respirable dust for the application of this limit is to be determined from the fraction passing a size-selector with the characteristics defined in the ACGIH 2009 TLVs® and BEIs® Appendix D, paragraph C.
6. 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 2009 TLVs® and BEIs® (Biological Exposure Indices) Appendix D, paragraph A.

Section 3 – Hazards Identification

☆☆☆☆☆Emergency Overview ☆☆☆☆☆

This formed solid metal product poses little or no immediate health or fire hazard. When product is subjected to welding, burning, melting, sawing, brazing, grinding, or other similar processes, potentially hazardous airborne particulate and fumes may be generated. These operations should be performed in well-ventilated areas. Avoid inhalation of metal dusts and fumes. Iron or steel foreign bodies imbedded in the cornea of the eye will produce rust stains unless removed fairly promptly.

If it is necessary to weld, heat, saw, grind, drill or any physical operation that will generate a fume or airborne particulates, an exposure assessment should be performed by a qualified industrial hygienist to determine the required personal protection equipment (PPE).

If appropriate, respiratory protection and other personal protective equipment should be used.

Potential Health Effects

Primary Entry Routes: Inhalation, eye and/ or skin, if coated. Steel products in the natural state do not present an inhalation, ingestion or contact hazard. However, operations such as burning, welding, sawing, brazing, machining and grinding may result in the following effects if exposures exceed recommended limits as listed in Section 2.

Target Organs: Respiratory system

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. Excessive inhalation of fumes of freshly formed metal oxide particles sized below 1.5 microns and usually between 0.02-0.05 microns from many metals can produce an acute reaction known as “metal fume fever”. Symptoms consist of chills and fever (very similar to and easily confused with flu symptoms), metallic taste in the mouth, dryness and irritation of the throat followed by weakness and muscle pain. The symptoms come on in a few hours after excessive exposures and usually last from 12 to 48 hours. Long-term effects from metal fume fever have not been noted. Freshly formed oxide fumes of manganese have been associated with causing metal fume fever. Inhalation of chromium compounds may cause upper respiratory tract irritation. Inhalation of silica dusts may result in silicosis. Nickel compounds are respiratory tract irritants.
- **Eye:** Excessive exposure to high concentrations of dust may cause irritation to the eyes. Particles of iron or iron compounds, which become imbedded in the eye, may cause rust stains unless removed fairly promptly. Torching or burning operations on steel products with surface treatments, oil coatings, or acrylic films may produce emissions that can be irritating to the eyes. Molybdenum compounds are eye irritants.
- **Skin:** Skin contact with dusts or metallic fumes may cause irritation, sensitization, or physical abrasion possibly leading to dermatitis. Repeated or prolonged contact with chemical surface treatments or oil residue may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals. Molybdenum compounds are skin irritants. Exposure to nickel may cause contact and atopic dermatitis and allergic sensitization.
- **Ingestion:** Ingestion of harmful amounts of this product as distributed is unlikely due to its solid insoluble form. Ingestion of dust may cause nausea and/or vomiting.

Chronic Effects: Chronic inhalation of metallic fumes, dusts and oil mist are associated with the following conditions:

- **IRON OXIDE:** Chronic inhalation of excessive concentrations of iron oxide fumes or dusts may result in the development of a benign pneumoconiosis, called siderosis, which is observable as an X-ray change. No physical impairment of lung function has been associated with siderosis. Inhalation of excessive concentrations of ferric oxide may enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens. Iron oxide is listed as a Group 3 (not classifiable) carcinogen by IARC.
- **CHROMIUM:** The health hazards associated with exposure to chromium are dependent upon its oxidation state. The metal form (chromium as it exists in this product) is of very low toxicity. The hexavalent form is very toxic. Repeated or prolonged exposure to hexavalent chromium compounds may cause respiratory irritation.

Section 3 – Hazards Identification (continued)

Chronic Effects (continued):

- **NICKEL:** Exposure to nickel dusts and fumes can cause sensitization dermatitis, respiratory irritation, asthma, pulmonary fibrosis, edema and may cause nasal or lung cancer in humans. IARC lists nickel and certain nickel compounds as Group 2B carcinogens (sufficient animal data). ACGIH 2009 TLVs® and BEIs® lists insoluble nickel compounds as confirmed human carcinogens.
- **MANGANESE:** Chronic exposure to high concentrations of manganese fumes and dusts may adversely affect the central nervous system with symptoms including languor, sleepiness, weakness, emotional disturbances, spastic gait, mask-like facial expression and paralysis. Animal studies indicate that manganese exposure may increase susceptibility to bacterial and viral infections.
- **COBALT:** Chronic exposure to cobalt metal, dust, or fume may cause respiratory or dermatologic signs and symptoms. Following skin sensitization, contact with cobalt causes eruptions of dermatitis increases and on frictional surfaces of the arms, legs, and neck. Chronic respiratory exposure results in reduced lung function, increased fibrotic changes on chest X-ray, production of scanty mucoid sputum, and shortness of breath.
- **SILICON:** Excessive or long term exposure to silicon can result in silicosis, fibrosis, or chronic pulmonary dysfunction.
- **MOLYBDENUM:** Certain handling operations, such as burning and welding, may generate both insoluble molybdenum compounds (metal and molybdenum dioxide) and soluble molybdenum compounds (molybdenum trioxide). Molybdenum compounds generally exhibit a low order of toxicity with the trioxide the more toxic. However, some reports indicate that the dust of the molybdenum metal, molybdenum dioxide and molybdenum trioxide may cause eye, skin, nose and throat irritation in animals.
- **TUNGSTEN:** This metal has no known chronic effects. Repeated or prolonged exposure to this compound is not known to aggravate medical conditions.
- **COPPER:** Inhalation of high concentrations of freshly formed oxide fumes and dusts of copper can cause metal fume fever. Chronic inhalation of copper dust has caused, in animals, hemolysis of the red blood cells, deposition of hemofuscin in the liver and pancreas, injury to lung cells and gastrointestinal symptoms.
- **ALUMINUM:** The signs and symptoms of chronic exposure to aluminum metal dust include shortness of breath, weakness and cough.

Carcinogenicity: IARC, NTP, and OSHA do not list steel products as carcinogens. IARC identifies welding fumes, nickel and certain nickel compounds as Group 2B carcinogens, a mixture that is possibly carcinogenic to humans. ACGIH lists insoluble nickel compounds as confirmed human carcinogens. IARC lists chromium metal and trivalent chromium compounds as Group 3 carcinogens, not classifiable as to their human carcinogenicity. Hexavalent chromium compounds are listed by IARC and NTP as Group 1 carcinogens that are carcinogenic to humans. NTP Fourth Annual report on Carcinogens cites “certain Chromium compounds” as human carcinogens. ACGIH has reviewed the toxicity data and concluded that chromium metal is not classifiable as a human carcinogen. Oil Mists (as mineral oil) are listed by IARC as Group 3 carcinogens that are not classifiable as to its carcinogenicity to humans. Cobalt is classified as an A3 (confirmed animal carcinogen with unknown relevance to humans) by ACGIH and listed by IARC as a category 2B (Possibly carcinogenic to humans).

Medical Conditions Aggravated by Long-Term Exposure: Long-term inhalation exposure to high concentrations (over-exposure) to pneumoconiotic agents may act synergistically with inhalation of oxides, fumes or dusts of this product to cause toxic 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.

Chemical Surface Treatments/Coatings:

The possible presence of chemical surface treatments and oil coatings should be considered when evaluating potential employee health hazards and exposures during handling and welding or other fume generating activities. Removal of surface coatings should be considered prior to such activities. Repeated or prolonged contact with chemical surface treatments or oil residue may cause skin irritation, dermatitis, ulceration or allergic reactions in sensitized individuals. Torching or burning operations on steel products with surface treatments, oil coatings or acrylic films may produce emissions that can be irritating to the eyes and respiratory tract.

SARA Potential Hazard Categories: Immediate Acute Health Hazard; Delayed Chronic Health Hazard

Section 4 - First Aid Measures

Inhalation: For over-exposure to airborne fumes and particulate, remove exposed person to fresh air. If breathing is difficult or has stopped, administer artificial respiration or oxygen as indicated. Seek medical attention promptly. Metal fume fever may be treated by bed rest, and administering a pain and fever reducing medication.

Eye Contact: Flush with large amounts of clean water to remove particles. Seek medical attention if irritation persists. If contact with thread compounds, wash thoroughly with soap and water.

Skin Contact: Remove contaminated clothing. Wash affected areas with soap or mild detergent and water. If thermal burn has occurred, flush area with cold water and seek medical attention. If a persistent rash or irritation occurs, seek medical attention. If contact with thread compounds, wash thoroughly with soap and water.

Ingestion: Not a probable route of industrial exposure. However, if ingested, seek medical attention immediately.

Section 5 – Fire and Explosion Hazard Information

Flash Point: NA

LEL: NA

Flash Point Method: NA

UEL: NA

Burning Rate: NA

Auto-ignition Temperature: NA

Flammability Classification: Non-flammable

Section 5 – Fire and Explosion Hazard Information (continued)

Extinguishing Media: Not applicable for solid product. Use extinguishers appropriate for surrounding materials. Use water spray, dry chemical, alcohol foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures and to dilute spills to non-combustible mixtures.

Unusual Fire or Explosion Hazards: Not applicable for solid product. Do not use water on molten metal. Material can form explosive and flammable mixtures with air. Oil coated steel will smolder and smoke, but will not burn.

Hazardous Combustion Products: Thermal decomposition of metal may produce metal oxides/fumes/dust and oxides of sulfur, phosphorous and carbon. The coating on the product may yield noxious gases such as the metal oxides.

Fire-Fighting Instructions: Do not release runoff from fire control methods to sewers or waterways. Use appropriate fire extinguishers for surrounding materials.

Fire-Fighting Equipment: Wear a self-contained breathing apparatus (SCBA) with a full face-piece operated in pressure-demand or positive-pressure mode and full protective clothing.

Section 6 - Accidental Release Measures

Spill/Leak Procedures: Not applicable to steel in solid state. 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. 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, state, and local regulations.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120) and all other pertinent state and Federal requirements.

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Section 7 - Handling and Storage

Handling Precautions: Operations with the potential for generating high concentrations of airborne particulates should be evaluated and controlled as necessary. Practice good housekeeping. Avoid breathing metal fumes and/or dust.

Storage Requirements: Store away from acids and incompatible materials. Store in cool, well-ventilated areas away from sources of heat and ignition, oxidizing agents, and incompatible materials.

Section 8 - Exposure Controls / Personal Protection

Engineering Controls: Use controls as appropriate to minimize exposure to metal fumes and dusts during handling operations.

Ventilation: Provide general or local exhaust ventilation systems to minimize airborne concentrations. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.

Administrative Controls: Do not use compressed air to clean-up spills.

Respiratory Protection: Seek professional advice prior to respirator selection and use. Follow OSHA respirator regulations (29 CFR 1910.134) and, if necessary, wear a NIOSH-approved respirator. Select respirator based on its suitability to provide adequate worker protection for given working conditions, level of airborne contamination, and presence of sufficient oxygen.

Protective Clothing/Equipment: For operations which, result in elevating the temperature of the product to or above its melting point or result in the generation of airborne particulates, use protective clothing, gloves and safety glasses to prevent skin and eye contact. Contact lenses should not be worn where industrial exposures to this material are likely. Use safety glasses or goggles as required for welding, burning, sawing, brazing, grinding or machining operations. Protective gloves should be worn whenever handling steel scrap or touching the steel coil. An example of such a glove is a Leather Glove with Kevlar Liner. Protective gloves should be worn as required for welding, burning or handling operations. Where the oil coating is applied to the product, wear gloves when handling, do not continue to use gloves or work clothing that has become saturated or soaked through with oil coating. Wash skin that has been exposed to oil with soap and water or waterless hand cleaner.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance and Odor: Gray metallic color with no odor

Odor Threshold: Not applicable (NA)

Vapor Pressure: NA

Vapor Density (air =1): NA

Molecular Formula: NA

Molecular Weight: NA

Density: NA

Specific Gravity (H₂O = 1): >1.0

pH (as shipped): NA

Water Solubility: Insoluble

Other Solubilities: NA

Boiling Point: NA

Viscosity: NA

Refractive Index: NA

Surface Tension: NA

% Volatile: NA

Evaporation Rate (Butyl Acetate = 1): NA

Freezing Point: NA

Melting Point: 2795°F as Fe

Section 10 - Stability and Reactivity

Stability: Steel products are stable under normal storage and handling conditions. May react with strong acids to form hydrogen gas.

Polymerization: Hazardous polymerization cannot occur.

Chemical Incompatibilities: Will react with strong acids to form hydrogen. Iron oxide dusts in contact with calcium hypochlorite evolve oxygen and may cause an explosion.

Conditions to Avoid: Storage with strong acids or calcium hypochlorite.

Hazardous Decomposition Products: Thermal oxidative decomposition of steel products can produce fumes containing oxides of iron and manganese as well as other elements.

Section 11 - Toxicological Information

Toxicity Data:*

Stainless Steel Products are not toxic in the solid form. The toxicity occurs when processes generate dust and fumes of individual components. The following information is available:

Eye Effects:

Eye contact with the individual components may cause particulate irritation. Implantation of iron particles in guinea pig corneas has resulted in rust rings with corneal softening about rust ring

Skin Effects:

Skin contact with the individual components may cause physical abrasion, irritation and dermatitis

Acute Inhalation Effects: Inhalation of the individual alloy components has been shown to cause various respiratory effects.

Acute Oral Effects: No Information Found (NIF)

Other: No LC50 or LD50 has been established for the mixture as a whole. Iron LD50: 30 g/kg oral (rat). Nickel LD50: 250 mg/kg (intraperitoneal rat). Manganese LD50: 9g/kg (oral rat). Molybdenum: NIF. Cobalt LD50: 6,171 mg/kg (oral rat). Copper LD50: 413 mg/kg (oral mouse). Silicon LD50: 3,160 mg/kg (oral rat). Aluminum: NIF. Tungsten LD50: 500 mg/24H (skin rodent). Chromium LD50: 27500 ug/kg (rodent-rat-unreported).

Chronic Effects: Refer to Section 3

Carcinogenicity: Refer to Section 3

Mutagenicity: NIF

Teratogenicity: NIF

Notes:

* NIOSH, Registry of Toxic Effects of Chemical Substances (RTECS); See NIOSH, RTECS: (NO7400000) for additional toxicity data on iron oxide; (GB420000) for chromium; (QR5950000) for nickel; (OO9275000) for manganese; (QA4680000) for molybdenum; (FF5250100); for copper; (VW0400000) for silicon; (GF8750000) for cobalt (GF8750000); aluminum (BD0330000); (YO7175000) for tungsten.

Section 12 - Ecological Information

Stainless Steel (all grades) and Black Coat™ Stainless poses no ecological hazard unless the metal is processed to generate dust, fumes, and soluble compounds of the individual components.

Ecotoxicity: No Information Found (NIF) for product as a whole. However, individual components have been found to be toxic to the environment. Metal dusts may migrate into soil and groundwater and be ingested by wildlife.

Environmental Fate: NIF

Environmental Degradation: NIF

Soil Absorption/Mobility: NIF for product as a whole. However, individual components have been found to be absorbed by plants from soil.

Aquatic Toxicity: NIF for product as a whole. However, individual components have been found to have aquatic toxicity:

- 24-hour, Ictalurus punctatus (Channel catfish), LC₅₀>0.5% as Iron
- 24 to 96 hour, Oncorhynchus mykiss (Rainbow trout), LT₅₀ = 162 µg/L as aluminum
- 96 hr, Pimephales promelas, (Fathead minnow), LC₅₀ 10-100 mg/L as Chromium
- 4 days post hatch, Omcorhynchus mykiss (Rainbow trout), LC₅₀ 60-90 µg/L as nickel

Section 13 - Disposal Considerations

Disposal: This material is considered to be a solid waste, not a hazardous waste. Follow applicable Federal, state, and local regulations for disposal of solid waste and airborne particulates accumulated during handling operations of steel. Do not release into sewers or waterways. Controlled burning for disposal. Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.

Disposal Regulatory Requirements: Follow applicable Federal, state, and local regulations.

Container Cleaning and Disposal: Follow applicable Federal, state and local regulations. Observe safe handling precautions.

Section 14 - Transport Information

US Department of Transportation (DOT) Data (49 CFR 172.101):

The product(s), **Stainless Steel (all grades) and Black Coat™ Stainless** are **Not Listed** as hazardous substance under 49 CFR 172.101. All federal, state, and local laws and regulations that apply to the transport of this type of material must be adhered to.

Shipping Name: Not Applicable (NA)	Packaging Authorizations (173.***)	Quantity Limitations (173.27 & 175.75)
Shipping Symbols: NA	a) Exceptions: None	a) Passenger Aircraft or Rail: NA
Hazard Class: NA	b) Non-bulk: NA	b) Cargo Aircraft Only: NA
UN No.: NA	c) Bulk: NA	Vessel Stowage Location: NA
Packing Group: NA		a) Vessel Stowage: NA
DOT/ IMO Label: NA		b) Other: NA
Special Provisions (172.102): None		

The International Maritime Dangerous Goods (IMDG) and the Regulations Concerning the International Carriage of Dangerous Goods by Rail (RID) classification, packaging and shipping requirements follow the US DOT Hazardous Materials Regulation.

Section 15 - Regulatory Information

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

This product and/or its constituents are subject to the following regulations:

OSHA Regulations: Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-2, Z-3): The product(s), **Stainless Steel (all grades) and Black Coat™ Stainless** as a whole is not listed. However, individual components of the product are listed. Refer to Section 2

EPA Regulations: The product(s), **Stainless Steel (all grades) and Black Coat™ Stainless** as a whole is not listed. However, individual components of the product are listed:

CAA: Nickel, Chromium Compounds and Manganese

CERCLA: Superfund: Steel products or scrap are not listed as hazardous substances. Metals in solid form greater than 100 micrometers (0.004 Inches) are not required to be reported under CERCLA. [(Individual Reportable Quantities, Manganese (RQ Sec. 103: 1.0 lb.), Nickel (RQ Sec. 103: 100 lb), Chromium (RQ Sec. 103: 5,000 lb.)]

Chromium Compounds, Manganese and Nickel are listed under SARA 302

CWA: Nickel, Copper and Chromium Compounds are listed.

RCRA: Chromium and Nickel are regulated under this act

SARA Immediate (acute) health hazard and delayed (chronic) health hazard

311/312:

SARA 313: Nickel, Manganese, Copper, Aluminum, Cobalt and Chromium Compounds are subject to SARA 313 reporting requirements. Please also note that if you prepackage or otherwise redistribute this product to industrial customers, SARA 313 requires that a notice be sent to those customers.

TSCA: All components are listed on the TSCA inventory

SDWA: Iron, Chromium, Nickel, Manganese, Aluminum, Molybdenum, and Copper are regulated under this act.

Regulations Key:

CAA Clean Air Act (42 USC Sec. 7412; 40 CFR Part 61 [As of: 8/18/06])

CERCLA Comprehensive Environmental Response, Compensation and Liability Act (42 USC secs. 9601(14), 9603(a); 40 CFR Sec. 302.4, Table 302.4, Table 302.4 and App. A)

CWA Clean Water Act (33 USC Secs. 1311; 1314(b), (c), (e), (g); 136(b), (c); 137(b), (c) [as of 8/2/06])

RCRA Resource Conservation Recovery Act Act (42 USC Sec. 6921; 40 CFR Part 261 App VIII)

SARA Superfund Amendments and Reauthorization Title III Section 302 Extremely Hazardous Substances (42 USC secs. 11023, 13106; 40 CFR Sec. 372.65) and Section 313 Toxic Chemicals (42 USC secs. 11023, 13106; 40 CFR sec. 372.65 [as of 6/30/05])

TSCA Toxic Substance Control Act (15 U.S.C. s/s 2601 et seq. [1976])

SDWA Safe Drinking Water Act (42 U.S.C. s/s 300f et seq. [1974])

State Regulations: The product(s), **Stainless Steel (all grades) and Black Coat™ Stainless** as a whole is not listed in any state regulations. However, individual components of the product are listed in various state regulations:

Pennsylvania Right to Know: Contains regulated material in the following categories:

- Hazardous Substances: Chromium, Nickel, Manganese, Molybdenum, Copper, Aluminum, Cobalt, Tungsten, Silicon
- Environmental Hazards: Nickel, Manganese, Copper, Cobalt, Chromium
- Special Hazard Substances: Chromium, Nickel and Iron

California Prop. Nickel, chromium and cobalt are materials known to the State of California to cause cancer.

65:

New Jersey: Contains regulated material in the following categories:

- Hazardous Substances: Aluminum (dust and fume), Iron (as Iron Oxide), Chromium, Nickel, Cobalt, Tungsten, Silicon Manganese, Molybdenum, Copper
- Environmental Hazards: None Listed
- Special Hazardous Substance: Manganese, Nickel, and Chromium

Section 15 - Regulatory Information (continued)

State Regulations (continued):

Minnesota: Aluminum (dust and fume), Chromium (metal), Manganese (elemental and compounds), Nickel (elemental, soluble, and insoluble compounds)

Massachusetts: Aluminum (dust and fume), Cobalt, Tungsten, Silicon (dust), Iron, Nickel, Chromium (compounds), Manganese, and Molybdenum

Other Regulations:

WHMIS Classification The product as a whole is not listed as Stainless Steel and Black Coat™ Stainless. However, Manganese: D2A, disclosure at 0.1%. Nickel: D2A, D2B, disclosure at 0.1%, Chromium: uncontrolled, disclosure at 0.1% in controlled mixture, Silicon: B4, disclosure at 1.0%, Aluminum: disclosure at 1.0%

WHMIS - Workplace Hazardous Materials Information System

Section 16 - Other Information

Prepared By: AM Health and Safety, Inc.

Revision History:

10/01/1985– Original

2/15/11 – Company update and re-format

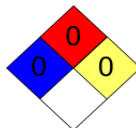
Hazardous Material Identification System (HMIS) Classification

Health Hazard	0
Fire Hazard	0
Physical Hazard	0

HEALTH = 0, No significant risk to health

FIRE = 0, Will not burn

PHYSICAL HAZARD = 0, Normally Stable

National Fire Protection Association (NFPA)

HEALTH = 0, No hazard beyond that of ordinary combustible materials.

FIRE = 0, Will not burn

INSTABILITY = 0, Normally Stable

Disclaimer: This information is taken from sources or based upon data believed to be reliable. However, AK Steel and AM Health and Safety, 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.