MATERIAL SAFETY DATA SHEET
STAINLESS STEEL
January 1, 2013

COMPANY

Ribbon Technology Corporation
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TRADE NAME (Common Name or Synonym)	**EMERGENCY PHONE NUMBER**
Stainless Steel Fiber	614/864-5444

CHEMICAL NAME	**FORMULA**	**DOT IDENTIFICATION NUMBER**
Stainless	N/A	N/A

SECTION 2 - HAZARDOUS INGREDIENTS
NOTE: PRODUCTS UNDER NORMAL CONDITIONS DO NOT REPRESENT AN INHALATION, INGESTION OR CONTACT HEALTH HAZARD.

BASE METAL, ALLOYING ELEMENTS AND METALLIC COATINGS	% COMPOSITION BY WEIGHT (1)	ACGIH TLV (mg/m3)(2)
Base Metal		
Iron (Fe)	60-88	5 (As Iron Oxide)
Alloying Elements		
Chromium (Cr)	10-30	.5
Nickel (Ni)	0-27	1
Manganese (Mn)	<6	5 (As Dust-Ceiling)
Molybdenum (Mo)	<6	10 (Insoluble Compound)
Copper (Cu)	<6	1 (Dust & Mist)
Titanium (Ti)	<6	10 (Total Dust)
Carbon (C)	<2	None Established
Phosphorus (P)	<2	None Established
Sulfur (S)	<2	5 (As $S0_2$)
Silicon (Si)	<2	10 (Total Dust)
Cobalt (Co)	<2	.1 (Dust & Fume)
Niobium (Nb)	<2	None Established
Nitrogen (N)	<2	6 (As $N0_2$)
Tin (Sn)	<2	2

(1) % OF ALLOYING MATERIAL VARIES WITH GRADE OF MATERIAL.
(2) 1985-1986 ACGIH THRESHOLD LIMIT VALUE.

SECTION 3 - PHYSICAL DATA

MATERIAL IS (At Normal Conditions)
Solid

APPEARANCE AND ODOR
Gray-Black, Odorless

MELTING POINT (Base Metal)
>2500°F

SPECIFIC GRAVITY
Approximately 7

SECTION 4 - FIRE AND EXPLOSION EXTINGUISHING MEDIA

N/A

SPECIAL FIRE FIGHTING PROCEDURES

Steel products in the solid state present no fire or explosion hazard.

UNUSUAL FIRE AND EXPLOSION PROCEDURES

N/A

SECTION 5 - REACTIVITY DATA

STABILITY
Stable

INCOMPATIBILITY (Materials To Avoid)
Reacts with strong acids to produce hydrogen gas.

CONDITIONS TO AVOID

N/A

HAZARDOUS DECOMPOSITION PRODUCTS

Metallic dust or fumes may be produced during welding, burning, grinding and possibly machining. Refer to ANSI Z49.1

SECTION 6 - HEALTH HAZARD DATA

NOTE: STEEL PRODUCTS IN THE NATURAL STATE DO NOT PRESENT AN INHALATION, INGESTION OR CONTACT HAZARD. HOWEVER, OPERATIONS SUCH AS BURNING, WELDING, SAWING, BRAZING AND GRINDING MAY RELEASE FUMES AND/OR DUSTS WHICH MAY PRESENT HEALTH HAZARDS IF TLV'S ARE EXCEEDED.

MAJOR EXPOSURE HAZARD:

INHALATION SKIN CONTACT SKIN ABSORPTION

EYE CONTACT INGESTION

EFFECTS OF OVEREXPOSURE

Short-term exposure to fumes/dust may produce irritation of eyes and respiratory system. Inhalation of high concentrations of freshly formed oxide fumes or iron, manganese and copper may cause metal fume fever characterized by a metallic taste in the mouth, dryness and irritation of the throat and influenza-like symptoms.

Chronic inhalation of high concentrations of iron oxide fumes or dust may lead to a benign pneumoconiosis (siderosis). Inhalation of high concentrations of ferric oxide may possibly enhance the risk of lung cancer development in workers exposed to pulmonary carcinogens.

Chromium and nickel and their compounds are listed in the 3rd Annual Report on carcinogens, as prepared by the National Toxicology Program (NTP). Exposure to high concentrations of dust and fumes can cause sensitization dermatitis, inflammation and/or ulceration of upper respiratory tract and possibly cancer of nasal passages and lungs.

Recent epidemiological studies of workers melting and working alloys containing nickel/chromium have found no increased risk of cancer.

EMERGENCY AND FIRST AID PROCEDURES

If exposed to excessive levels of metal fumes, remove to fresh air, and seek medical aid immediately.
Eyes - flush with water for at least 15 minutes.

SECTION 7 - SPILL OR LEAK PROCEDURES SPILL OR LEAK PROCEDURES

This material may be reclaimed for reuse.

WASTE DISPOSAL METHODS

According to local, state and federal regulations.

SECTION 8 - SPECIAL PROTECTION
RESPIRATORY

NIOSH/MSHA - Approved dust and fume respirator should be used to

avoid excessive inhalation of particulate when exposure exceeds TLV's.

VENTILATION

Local exhaust ventilation should be utilized when welding,burning, sawing, brazing, grinding or machining when exposure exceeds TLV's.

EYE PROTECTION AND PROTECTIVE CLOTHING

Safety glasses or goggles should be utilized as required by exposure. Other protective equipment should be utilized as required by the welding standards. Gloves are recommended for handling fiber.

SECTION 9 - SPECIAL PRECAUTIONS

In welding, precautions should be taken for airborne contaminants that may originate from components of the welding rod. Plasma arc cutting or welding can generate ozone. Overexposure can result in mucous membrane irritation, as well as pulmonary changes including irritation, congestion and edema.

Arc or spark generated when welding or burning could be a source of ignition for combustible and flammable materials.

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