

**SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Product Name: **Stainless Steel** Grades: 16 - 6, 21 - 6 - 9, 303, 304 - 304L, 305, 309 - 309S, 310 - 310S, 316 - 316L, 317 - 317L, 321, 347 - 348, 403, 405, 410, 416, 430, 446.  
 Synonyms : **None**  
**TW Metals Company, Inc.** The Arboretum, 760 Constitution Drive, Exton PA 19341  
**Emergency Phone Number: Chemtrec (24 hrs) 1-800-424-9300 or Contact Your Nearest TW Metals Office**

**SECTION 2 - COMPOSITION/INFORMATION ON INGREDIENTS**

Ingredient	CAS #	% Weight	Occupational Exposure Limits ( mg / m3 )	
			OSHA PEL	ACGIH TLV
Iron ( Fe )	7439 - 89 -6	39-86	10 ( oxide, dust & fume )	10 (oxide,dust & fume)
*Chromium ( Cr )	7440 - 47 -3	10-27	1 ( Cr )	0 . 5 ( Cr )
*Nickel ( Ni )	7440 - 02 -0	0- 22	1 . 0 ( Ni )	1 . 0 ( Ni )
*Manganese ( Mn )	7439 - 96 -5	0 .3 - 10	5 . 0 ( fume )	0 . 2 ( Mn )
*Copper ( Cu )	7441 - 50 -8	0 . 04 - 4 . 4	0 . 1 ( fume )	0 . 2 ( fume )
Molybdenum ( Mo )	7439 - 98 -7	0- 4	15 ( total dust )	15 ( insoluble )
**Aluminum ( Al )	7429 - 90 -5	0- 2	15 ( total dust )	5 ( welding fumes )
Calcium ( Ca )	7440 - 70 -2	0-2		
Silicon ( Si )	7440 - 21 -3	0-2	15 ( dust )	10 ( inhaled dust )
Columbium ( Cb )	7440 - 03 -1	0- 1		
*Cobalt ( Co )	7440 - 48 -4	0- 0 . 75	0 . 1 ( Co )	0 . 02 ( Co )
Titanium ( Ti )	7440 - 32 -6	0- 0 . 7	15 ( TiO2 )	10 ( TiO2 )
Carbon ( C )	7440 - 44 -0	0- 0 . 5		
Sulphur ( S )	7704 - 34 -9	0 . 001 - 0 . 4	13 ( SO2 )	5 ( SO2 )
*Selenium ( Se )	7482 - 49 -2	0- 0 . 4	0 . 2 ( Se )	0 . 2 ( Se )
*Phosphorus ( P )	7723 - 14 -0	0 . 001 - 0 . 2	0 . 1 ( P )	0 . 1 ( P )
Tantalum ( Ta )	7440 - 25 -7	0 . 01 - 1 . 1	5 (Ta)	5 (Ta)

Note: Those elements identified by an \* (including red or white phosphorous) and those elements capable of generating highly toxic fumes or dusts (identified by a \*\*) are classified as toxic by EPA in 40 CFR 372.65 and subject to reporting requirements of SARA Title III Section 313 and 40 CFR 372

**SECTION 3 - HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW:** Stainless steel products in their solid state present no inhalation, ingestion or contact health hazard. However, inhaling dusts, fumes or mists which may be generated during certain manufacturing procedures (burning, melting, welding, sawing, brazing, grinding and machining) may be hazardous to your health. Dusts may also be irritating to the unprotected skin or eyes.  
**ACUTE EFFECTS:** Excessive exposure to dusts / fumes may cause irritation of eyes, nose or throat. Inhalation of dusts / fumes may result in metal fume fever (metallic taste in mouth, dryness and irritation of throat, chills and fever).  
**CHRONIC EFFECTS:** Prolonged inhalation of fumes or dusts may cause a variety of adverse health effects to the respiratory system, including (but not necessarily limited to) lesions of the mucous membrane, bronchitis, pneumonia and cancers fo the nasal cavity and respiratory tract.  
**POTENTIAL HEALTH EFFECTS/MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:**  
 Any pre-existing chronic respiratory condition (asthma, chronic bronchitis, emphysema).  
**ROUTES OF ENTRY:** Inhalation (dusts / fumes / mists), Contact with Skin and Eyes (dusts / mists), Ingestion (dusts).

**SECTION 4 - FIRST AID MEASURES**

**INHALATION:** Immediately remove victim to fresh air. If condition persists, consult physician.  
**EYE CONTACT:** Immediately flush with running water to remove particulates, consult physician.  
**SKIN CONTACT:** If irritation develops, remove clothing and wash with soap and water. If condition persists, consult physician.  
**INGESTION:** Consult physician.  
**NOTE TO PHYSICIAN:** None.

**SECTION 5 - FIRE FIGHTING MEASURES**

**FLASH POINT:** Nonflammable.  
**SPECIAL FIRE FIGHTING INSTRUCTIONS AND EQUIPMENT:** None required.  
**AUTOIGNITION TEMPERATURE:** NA  
**FLAMMABLE LIMITS:** Nonflammable.  
**EXTINGUISHING MEDIA:** Use what is appropriate for surrounding fire.  
**HAZARDOUS COMBUSTION PRODUCTS:** None.  
**UNUSUAL FIRE AND EXPLOSION HAZARDS:** None known.

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**CLEAN UP PROCEDURES:** No special procedures needed.  
**SPECIALIZED EQUIPMENT:** None.

**SECTION 7 - HANDLING AND STORAGE**

**PRECAUTIONS TO BE TAKEN IN HANDLING:** Minimize activities which may generate dusts, mists or fumes. Keep areas well ventilated. Use suitable equipment to move materials.  
**PRECAUTIONS TO BE TAKEN IN STORAGE:** None required.

**SECTION 8 - EXPOSURE CONTROLS, PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** Wear NIOSH approved dust / mist / fume respirator when welding or burning this metal.  
**EYE/FACE PROTECTION:** Face shields (welding or burning), Safety glasses (cutting or grinding).  
**OTHER PROTECTIVE EQUIPMENT:** Use appropriate protective clothing such as welding aprons and gloves when welding or burning.

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

APPEARANCE: Metal VAPOR PRESSURE: NA  
ODOR: Odorless BOILING POINT (C) : NA  
PHYSICAL STATE: Solid SOLUBILITY IN WATER : Insoluble  
VAPOR PRESSURE: NA SPECIFIC GRAVITY(H2O=1): 7 . 45 - 8 . 02

**SECTION 10 - STABILITY AND REACTIVITY**

STABILITY: Stable under normal storage conditions.  
HAZARDOUS POLYMERIZATION: Will not occur.  
CONDITIONS TO AVOID: None.  
HAZARDOUS DECOMPOSITION PRODUCTS (when heated): None.  
MATERIALS TO AVOID: Strong Acids (such as Sulfuric, Hydrochloric, Nitric).

**SECTION 11 - TOXICOLOGY INFORMATION**

LETHAL CONCENTRATION (LC50) : None established.  
REPRODUCTIVE EFFECTS: NA  
LETHAL DOSE (LD50) : NA  
MUTAGENICITY: NA  
TERATOGENICITY: NA  
CARCINOGENIC BY NTP, IARC OR OSHA: No (Note: Fumes / dusts / mists from this material may be carcinogenic if inhaled over long periods of time).

**SECTION 12 - ECOLOGICAL INFORMATION**

No Adverse ecological effects are expected.

**SECTION 13 - DISPOSAL CONSIDERATIONS**

WASTE DISPOSAL METHOD: Recycle scrap materials through scrap dealers and brokers. Dispose of used non-cyclable materials in accordance with local, state and federal regulations.

**SECTION 14 - TRANSPORT INFORMATION**

No special DOT regulations pertaining to this material.

**SECTION 15 - REGULATORY INFORMATION**

SARA: Some components of this product are classified as toxic by the EPA in 40 CFR 372 . 65 and subject to reporting requirements of SARA Title III Section 313 and 40 CFR 372 . 45

**SECTION 16 - OTHER INFORMATION**

OTHER PRECAUTIONS: Take appropriate precautions when moving or shipping this material to prevent injury to personnel handling it.

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