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### I. PRODUCT IDENTIFICATION

MANUFACTURER'S NAME: Titex Tools Inc. Tel. No. (413) 774-6561  
ADDRESS: 139 Silvio O. Conte Drive Date Prepared: January 28, 1986  
Greenfield, MA 01301  
TRADE NAME (Label Identity): TITEX PLUS  
CHEMICAL NAME (Generic): Ferrous or Nonferrous Alloys  
COMMON NAME: High Speed, Tool

### II. HAZARDOUS INGREDIENTS

The terms 'hazardous' and 'hazardous materials' as used within this MSDS should be interpreted as defined by, and in accordance with, the OSHA Hazard Communication Standard (29 CFR Part 1910, 1200) including cited Appendices, Lists, References, etc., all of which are hereby incorporated by reference.

MATERIAL OR COMPONENT	CAS NO.	OSHA PEL (Mg/M3)	ACGIH TLV (Mg/M3)
CORAL T	7440-48-4	0.1	0.1
CHROMIUM	7440-47-3	1.0	.50
IRON	1309-37-1	10	5
MANGANESE	7439-96-5 (Dust) (Fume) --	5 (Ceiling) --	5 (Ceiling) 1
MOLYBDENUM	7439-98-7	15	10
NICKEL	7440-02-0	1	1
VANADIUM	1314-62-1 (Dust)	.5 (Ceiling) .1 (Ceiling)	.05 .05
TITANIUM	13463-67-7	15	5
CARBON	1333-86-4	3.5	3.5
TUNGSTEN	7440-33-7	--	As Carbon Black
SILICON	7440-21-2 (Dust)	--	5
ALUMINUM	7429-90 (Dust) (Fume) --	-- --	5.0 10 5

REFER TO GRADE CHART

### III. PHYSICAL DATA

Boiling Point:	5000 F	Melting Point:	Appr. 2500 F
Specific Gravity (H2O=1):	Approx 7.8-8.2 (60 F)	Vapor Pressure:	N/A
Vapor Density (AIR=1):	N/A	Solubility in H2O:	Insoluble
% Volatiles By Volume:	N/A	Evaporation (Butyl Acetate=1):	N/A
Appearance & Odor:	Various Shapes, Solid	Odorless Metal	

### IV. FIRE AND EXPLOSION DATA

Flash Point:	None	Fire Point:	None
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V. HEALTH HAZARD INFORMATION

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WE DO NOT CONSIDER THIS PRODUCT IN THE FORM IT IS SOLD TO CONSTITUTE A PHYSICAL HAZARD OR A HEALTH HAZARD. SUBSEQUENT OPERATIONS SUCH AS GRINDING, MELTING, WELDING, CUTTING OR PROCESSING IN ANY OTHER FASHION MAY PRODUCE POTENTIALLY HAZARDOUS DUST OR FUME WHICH CAN BE INHALED, SWALLOWED, OR COME IN CONTACT WITH THE SKIN OR EYES.

Primary routes of Entry:	Inhalation	Emergency First Aid: Remove to fresh air, if condition continues, consult physician. Flush well with running water to remove particulate. Get medical attention. Brush off excess dust. Wash area well with soap & water. Seek medical help if large quantities of material have been ingested.
	Eye Contact	
	Skin Contact	
	Ingestion	

EFFECTS OF EXPOSURE: No toxic effects would be expected from exposure to the solid form of specialty steel. Prolonged, repeated exposure to fumes or dusts generated during heating, cutting, brazing or welding may or may not cause adverse health effects associated with the listed constituents in excess of OSHA permissible exposure limits established in 29 CFR Subpart Z. (See Section II).

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EXPOSURE LIMITS: Section II lists specific ingredients and permissible exposure limits.

IMPORTANT: Determine actual exposure by industrial hygiene monitoring.

POSSIBLE SIGNS AND SYMPTOMS OF EXPOSURE TO DUST, WELDING FUME AND GASES:

SHORT TERM EXPOSURE: Metallic taste; nausea, tightness of chest; fever; irritation of eyes, nose, throat and skin; loss of consciousness/death due to welding gases or lack of oxygen.

LONG TERM EXPOSURE: There are no adverse effects from the products in their solid form. Adverse effects may or may not result from long-term (chronic) exposure to dust, fume, gases, etc. that occur by way of subsequent operations on the product. Some studies would associate one (or more) of the constituents (per Section II) with the potential for neurologic, pulmonary, respiratory, skin or other disease. Chromium, cobalt and nickel in various chemical compounds have been identified as suspect human carcinogens by the I.A.R.C., N.T.P. Annual Reports. We believe there are no reliable scientific studies which show that workers exposed to operations upon our alloys suffer increased incidence of lung cancer or other disease because of their exposure to the forms of chromium, nickel or other elements in our products.

AGGRAVATION OF PRE-EXISTING RESPIRATORY OR ALLERGIC CONDITIONS MAY OCCUR IN SOME WORKERS

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VI. REACTIVITY DATA

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STABILITY: Chemically Stable

COMPATIBILITY: Reacts with strong acids to generate hydrogen gas

HAZARDOUS DECOMPOSITION PRODUCTS: Metallic Oxides

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VII. SPECIAL PROTECTION INFORMATION

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STEPS TO BE TAKEN IN CASE OF RELEASE OR SPILL: N/A

WASTE DISPOSAL METHOD: Solids - Sale as Scrap for Reuse

Dust, etc. - Follow Federal, State and Local  
Regulations Regarding Disposal

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VIII. SPECIAL PROTECTION INFORMATION

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VENTILATION REQUIREMENTS: General-Recommended (To keep airborne concentration of dust and fumes below ACGIH TLV'S)

Local - As Required

PERSONAL PROTECTIVE EQUIPMENT:

Respiratory Protection: If Fumes, misting or dust condition occurs and T.L.V. as indicated in Section II is exceeded, provide NIOSH approved respirators.

Eye Protection: Recommend approved safety glasses or goggles when working with dusty material.

Gloves: As Required

Other Clothing or Equipment: AS Required

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IX. SPECIAL PRECAUTIONS

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USE GOOD HOUSEKEEPING PRACTICES TO PREVENT ACCUMULATIONS OF DUSTS AND TO KEEP AIRBORNE DUST CONCENTRATIONS AT A MINIMUM.

THIS MATERIAL IS POTENTIALLY CONTAMINATED WITH COATINGS SUCH AS OILS FOR PRESERVATIVES AND OTHER CONTAMINANTS. IF THE MATERIAL IS CONTAMINATED, SPECIAL PRECAUTIONS SUCH AS PROCESS CONTROL AND PERSONAL PROTECTIVE EQUIPMENT APPROPRIATE TO THE NATURE OF THE SUSPECTED CONTAMINANTS SHOULD BE TAKEN TO AVOID RESULTING EXPOSURES WHEN HANDLING, CUTTING (THERMAL OR MECHANICAL) AND/OR HEATING OR MELTING.

While the information set forth on this material safety data sheet is believed to be accurate, as of the effective date, Titex Tools makes no representations regarding the accuracy or completeness of the information and assumes no liability for any loss, damage, or injury of any kind which may result from or arise out of the use or reliance on the information by any person.

N/A = NOT APPLICABLE