

CARPENTER TECHNOLOGY CORPORATION



GENERAL OFFICES:
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MATERIAL SAFETY DATA SHEET

NIAGARA SPECIALTY METALS
LOUIS VALERY
12600 CLARANCE CENTE
AKRON NY 14001

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FOR ADDITIONAL INFORMATION, PLEASE CONTACT THE HEALTH AND SAFETY DEPARTMENT AT: 215-371-2000.

SECTION I - PRODUCT IDENTIFICATION

PRODUCT DESCRIPTION: **CARPENTER KOVAR**

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENTS	%	PEL / TLV 8 HOUR TWA UNLESS OTHERWISE NOTED
IRON 1309-37-1 *	53.00	PEL 10.0 MG/M3 TLV 5.0 MG/M3
NICKEL 7440-02-0	28.00	PEL 1.0 MG/M3 TLV 1.0 MG/M3
COBALT 7440-48-4	17.40	PEL .05 MG/M3 TLV .05 MG/M3
MANGANESE 7439-96-5	.25	PEL 1.0 MG/M3 3.0 MG/M3 STEL TLV 0.5 MG/M3 (DUST) 1.0 MG/M3 (FUME) 3.0 MG/M3 STEL (FUME)
CHROMIUM 7440-47-3	.20	PEL 1.0 MG/M3 TLV 0.5 MG/M3
COPPER 7440-50-8	.10	PEL 0.1 MG/M3 (FUME) 1.0 MG/M3 (DUST/MIST) TLV 0.2 MG/M3 (FUME) 1.0 MG/M3 (DUST/MIST)

* - THESE SUBSTANCES ARE REGULATED IN THEIR OXIDE FORM

THE ABOVE PERCENT CONCENTRATIONS ARE CONSIDERED NOMINAL AND ARE PROVIDED FOR INDUSTRIAL HYGIENE PURPOSES. THEY DO NOT REPRESENT A CERTIFICATION OF CONTENT.

SECTION III - PHYSICAL DATA

BOILING PT.: HIGH
MELTING PT.: 2400 to 2800 F
SPECIFIC GRAVITY: 7.5 to 8.5
VAPOR PRESSURE: NIL
VAPOR DENSITY: NIL
SOLUBILITY IN WATER: INSOLUBLE
APPEARANCE AND ODOR: SOLID,
ODORLESS METAL

SECTION IV - FIRE AND EXPLOSION HAZARD DATA

UNLESS OTHERWISE NOTED, NONE. PRODUCT IS A SOLID METAL.
NOTES:

SECTION V - HEALTH HAZARD DATA

SPECIALTY STEEL ALLOYS ARE GENERALLY NOT CONSIDERED HAZARDOUS IN THE FORM SHIPPED (SOLID BARS, BILLETS, RODS, WIRE, ETC.). HOWEVER, IF YOUR PROCESS INVOLVES GRINDING, MELTING, WELDING, CUTTING, OR ANY OTHER PROCESS THAT CAUSES A RELEASE OF DUST OR FUME, HAZARDOUS LEVELS OF DUST OR FUME OF THE CONSTITUENTS OF THESE ALLOYS COULD BE GENERATED. THE FOLLOWING IS A LIST OF POTENTIAL HEALTH EFFECTS FOR ALL HAZARDOUS ELEMENTS THAT ARE POSSIBLY CONTAINED IN ANY OF OUR ALLOYS. PLEASE REFER TO SECTION II TITLED "HAZARDOUS INGREDIENTS" FOR A LIST OF THOSE SPECIFIC ELEMENTS CONTAINED IN THIS PARTICULAR ALLOY.

HEALTH EFFECTS:

- *ALUMINUM: METAL DUST AND OXIDE IS GENERALLY CONSIDERED A "NUISANCE" PARTICULATE. MAY CAUSE IRRITATION OF THE EYES, NOSE, AND THROAT IN EXCESSIVE CONCENTRATIONS.
- *BERYLLIUM: CAN CAUSE DERMATITIS, ALSO CAUSES A SEVERE CHRONIC LUNG DISEASE KNOWN AS "CHRONIC BERYLLIUM DISEASE" WHICH IS OFTEN FATAL.

IRON OXIDE: HAS CAUSED IRRITATION OF THE EYES, NOSE, AND SKIN OF EXPERIMENTAL ANIMALS. IT MAY HAVE THE SAME EFFECT ON HUMANS.

CHROMIUM: FERROCHROME ALLOYS HAVE BEEN ASSOCIATED WITH LUNG CHANGES IN WORKERS EXPOSED TO THESE ALLOYS.

COBALT: FUME OR DUST CAUSES IRRITATION OF THE NOSE AND THROAT AND MAY CAUSE AN ALLERGIC SKIN RASH. ALSO HAS BEEN REPORTED TO CAUSE RESPIRATORY DISEASE WITH SYMPTOMS RANGING FROM COUGH AND SHORTNESS OF BREATH TO PERMANENT DISABILITY AND DEATH. THE SYMPTOMS FREQUENTLY GO AWAY WHEN EXPOSURE HAS STOPPED, BUT SOMETIMES THE SYMPTOMS PROGRESS AFTER EXPOSURE HAS CEASED.

COLUMBIUM (NIOBIUM): IS EXPECTED TO HAVE SIMILAR EFFECTS TO TANTALUM.

COPPER: FUME OR DUST CAUSES IRRITATION OF THE EYES, NOSE, AND THROAT AND A FLU-LIKE ILLNESS CALLED METAL FUME FEVER. SYMPTOMS INCLUDE FEVER, MUSCLE ACHES, NAUSEA, CHILLS, DRY THROAT, COUGH, WEAKNESS, AND SWEET OR METALLIC TASTE IN THE MOUTH.