



Common Name	ALLOY - ALUMINUM
Manufactured by	VINCENT METALS
CAS Number	7429-90-5
Revised	05/01/1994
Source	Dolphin (DOL.116503)
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MATERIAL SAFETY DATA SHEET

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 TOLL FREE 800-328-7800



VINCENT METALS
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-----SECTION I. MATERIAL IDENTIFICATION -----

METAL AND METAL ALLOYS OF ALUMINUM, COPPER, LEAD AND STEEL

-----SECTION III. PHYSICAL DATA -----

PHYSICAL FORM: SOLID ODOR: NONE

	 ALUMINUM 	COPPER	LEAD	STEEL
SPECIFIC GRAVITY (H2O = 1)	2.5+	7.5+	8+	7+
FREEZE-MELT TEMP.(C)	480+	1000+	180+	1300+
COLOR:	SILVER	YELLOW TO RED	SOFT GRAY	GRAY- BLACK
SOLUBILITY IN H2O	NONE	NONE	NONE	NONE

-----SECTION IV. FIRE AND EXPLOSION DATA -----

FLASH POINT: (METHOD USED) NOT APPLICABLE
 EXTINGUISHING MEDIA: SEE BELOW
 FLAMMABLE LIMITS (LEL-UEL): NOT APPLICABLE
 AUTO IGNITION TEMP.: NOT APPLICABLE





SPECIAL FIRE FIGHTING PROCEDURES: SOLID MASSIVE FORM IS NOT COMBUSTIBLE.

FIRE AND EXPLOSION HAZARDS ARE MODERATE WHEN MATERIAL IS IN THE FORM OF DUST AND EXPOSED TO HEAT, FLAMES, CHEMICAL REACTION, OR IN CONTACT WITH POWERFUL OXIDIZERS. USE SPECIAL MIXTURES OF DRY CHEMICAL OR SAND. FIREFIGHTERS SHOULD WEAR SELF-CONTAINED BREATHING APPARATUS AND PROTECTIVE CLOTHING.





-----SECTION VI. HEALTH HAZARD DATA -----

PERMISSIBLE EXPOSURE LIMITS AND THRESHOLD LIMIT VALUES. SEE SECTION II.

ROUTE(S) OF ENTRY: INHALATION: YES; SKIN: YES; INGESTION: YES



UNDER NORMAL HANDLING CONDITIONS THE SOLID ALLOY PRESENTS NO SIGNIFICANT HEALTH HAZARDS. PROCESSING OF THE ALLOY BY DUST OR FUME PRODUCING OPERATION (GRINDING, BUFFING, HEATING, WELDING, ETC.) MAY RESULT IN THE POTENTIAL FOR EXPOSURE TO AIRBORNE METAL PARTICULATES OR FUME. THE EXPOSURE LEVELS IN SECTION II ARE RELEVANT TO FUMES AND DUSTS.

EFFECTS OF OVEREXPOSURE:

ALUMINUM -- EXCESSIVE EXPOSURE TO ALUMINUM FUME AND DUST HAS BEEN ASSOCIATED WITH LUNG DISEASE, BUT THIS EFFECT IS PROBABLY DUE TO SIMULTANEOUS SILICA EXPOSURE.

BERYLLIUM -- INHALATION OF BERYLLIUM DUST OR FUME MAY RESULT IN THE PRODUCTION OF AN ACUTE OR CHRONIC SYSTEMATIC DISEASE DEPENDING UPON THE LEVEL OF EXPOSURE AND THE BERYLLIUM COMPOUND INVOLVED. GRANULOMATOUS LESIONS OF THE SKIN, LIVER, KIDNEYS, SPLEEN, AND LYMPH NODES HAVE BEEN REPORTED.

DAMAGE TO THE LUNGS MAY BE IN BOTH THE ACUTE AND CHRONIC FORMS, BOTH OF WHICH HAVE SIMILAR SIGNS AND SYMPTOMS. THESE INCLUDE A RELATIVELY NON-PRODUCTIVE COUGH, PROGRESSIVE DIFFICULTY IN BREATHING, LOSS OF APPETITE, AND LOSS OF WEIGHT. THE MAJOR DIFFERENCE BETWEEN THE TWO IS THE SUDDENNESS OF ONSET AND THE RATE OF PROGRESSION. IN THE ACUTE FORM, THE SYMPTOMS APPEAR IN SEVERAL HOURS TO SEVERAL WEEKS AFTER EXPOSURE AND THERE IS USUALLY RAPID PROGRESSION OF SIGNS INCLUDING DYSPNEA, ANOREXIA, AND EXTREME WEIGHT LOSS. COMPLETE RECOVERY IS POSSIBLE AND FATAL CASES USUALLY RESULT FROM ACUTE HEART DISEASE. IN CHRONIC BERYLLIUM DISEASE, THE SYMPTOMS OR SIGNS ARE GENERALLY DELAYED IN THEIR ONSET AND ARE PERSISTENT IN NATURE. THEY MAY BE TRIGGERED OR AGGRAVATED BY STRESSES SUCH AS PREGNANCY, RESPIRATORY INFECTION, AND THYROTOXICOSIS. IN THE PROGRESSION OF THE DISEASE, SYMPTOMS OF HEART DISEASE MAY OCCUR. BERYLLIUM IS ALSO A SUSPECTED HUMAN CARCINOGEN AND HAS CAUSED CANCER IN LABORATORY ANIMALS.

CHROMIUM -- IN SOME WORKERS, CHROMIUM COMPOUNDS ACT AS ALLERGENS AND MAY CAUSE DERMATITIS AND MAY ALSO PRODUCE PULMONARY SENSITIZATION. CHROMIC ACID AND CHROMATES HAVE A DIRECT CORROSIVE EFFECT ON THE SKIN AND THE MUCOUS MEMBRANES OF THE UPPER RESPIRATORY TRACT. ALTHOUGH RARE, THERE MAY BE THE POSSIBILITY OF SKIN AND PULMONARY SENSITIZATION. IARC HAS DETERMINED THAT THERE IS SUFFICIENT EVIDENCE OF INCREASED LUNG CANCER AMONG WORKERS IN THE CHROMATE-PRODUCING INDUSTRY AND POSSIBLY AMONG CHROMIUM ALLOY WORKERS. THIS DETERMINATION IS SUPPORTED BY SUFFICIENT EVIDENCE FOR CARCINOGENICITY TO ANIMALS AND POSSIBLE MUTAGENICITY TESTING OF Cr VI COMPOUNDS.

COBALT -- COBALT HAS BEEN REPORTED AS CAUSING HYPERSENSITIZATION-TYPE

DERMATITIS IN INDIVIDUALS WHO ARE SUSCEPTIBLE. ANIMAL STUDIES HAVE SHOWN THAT PARTICULATE COBALT IS AN ACUTELY IRRITATING SUBSTANCE AND INDUSTRIAL EXPOSURES, POSSIBLY COMBINED WITH SMALL AMOUNTS OF SILICA, ARE REPORTED CAPABLE OF PRODUCING SERIOUS PNEUMOCONIOSIS WHICH IS INITIALLY OF AN INSIDIOUS NATURE.

COPPER -- MELTING, GRINDING, CUTTING OF COPPER MAY PRODUCE FUMES OR DUST. EXPOSURE TO, OR INHALATION OF THESE FUMES OR DUSTS MAY PRESENT POTENTIALLY SIGNIFICANT HEALTH HAZARDS. FUMES OF COPPER MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS, AND SKIN AND HAIR DISCOLORATION. WHILE INDUSTRIAL DERMATITIS HAS NOT BEEN REPORTED, KERATINIZATION OF THE HANDS AND THE SOLES OF THE FEET HAS BEEN REPORTED. SYSTEMICALLY AS WELL, COPPER DUST AND FUME CAUSE IRRITATION OF THE UPPER RESPIRATORY TRACT, METALLIC TASTE IN THE MOUTH, AND NAUSEA.

IRON -- THE INHALATION OF IRON OXIDE FUMES OR DUST MAY CAUSE AN APPARENT BENIGN PNEUMOCONIOSIS WHICH IS CALLED SIDEROSIS. THIS DISEASE IS REPORTED TO BE DISABLING, BUT MAKES X-RAY DIAGNOSIS OF OTHER LUNG CONDITIONS DIFFICULT OR IMPOSSIBLE.

LEAD -- SHORT-TERM EXPOSURE: LEAD IS AN ACCUMULATIVE POISON. THE EFFECTS OF INHALATION OF FUMES OR DUST OF INORGANIC LEAD MAY NOT DEVELOP QUICKLY. SYMPTOMS MAY INCLUDE DECREASED PHYSICAL FITNESS, FATIGUE, SLEEP DISTURBANCE, HEADACHE, ACHING BONES AND MUSCLES, CONSTIPATION, ABDOMINAL PAINS AND DECREASING APPETITE. THE EFFECTS ARE REVERSIBLE AND COMPLETE RECOVERY IS POSSIBLE. INHALATION OF LARGE AMOUNTS OF LEAD MAY LEAD TO SEIZURES, COMA AND EVEN DEATH.

LEAD -- LONG-TERM EXPOSURE: LONG-TERM EXPOSURE CAN RESULT IN A BUILD-UP OF LEAD IN THE BODY AND MORE SEVERE SYMPTOMS. THESE INCLUDE ANEMIA, PALE SKIN, A BLUE LINE AT THE GUM MARGIN, DECREASED HAND-GRIP STRENGTH, ABDOMINAL PAIN, SEVERE CONSTIPATION, NAUSEA, VOMITING AND PARALYSIS OF THE WRIST JOINT. PROLONGED EXPOSURE MAY ALSO RESULT IN KIDNEY DAMAGE. IF THE NERVOUS SYSTEM IS AFFECTED, USUALLY DUE TO VERY HIGH EXPOSURES, THE RESULTING EFFECTS INCLUDE SEVERE HEADACHE, CONVULSIONS, COMA, DELIRIUM AND DEATH. ALCOHOL INGESTION AND PHYSICAL EXERTION MAY BRING ON SYMPTOMS. CONTINUED EXPOSURE CAN RESULT IN DECREASED FERTILITY AND/OR INCREASED CHANCE OF MISCARRIAGE OR BIRTH DEFECTS.

MANGANESE -- CHRONIC MANGANESE POISONING MAY RESULT FROM INHALATION OF DUST OR FUMES. THE CENTRAL NERVOUS SYSTEM IS THE CHIEF SITE OF THE INJURY, BUT THERE MAY ALSO BE ADVERSE BLOOD AND KIDNEY EFFECTS. CHRONIC MANGANESE POISONING IS NOT A FATAL DISEASE ALTHOUGH IT IS EXTREMELY DISABLING. SOME INDIVIDUALS MAY BE HYPER-SUSCEPTIBLE TO MANGANESE. FRESHLY FORMED MANGANESE FUME HAS CAUSED FEVER AND CHILLS SIMILAR TO METAL FUME FEVER.

MAGNESIUM -- EXPOSURE TO MAGNESIUM MAY CAUSE METAL FUME FEVER WITH FLU-LIKE SYMPTOMS. PARTICLES IMBEDDED IN THE SKIN MAY CAUSE SEVERE LESIONS.

MOLYBDENUM -- THIS METAL CAN BE TOXIC VIA INTERPERITONEAL AND SUBCUTANEOUS ROUTES. CARE SHOULD BE TAKEN TO AVOID INHALATION OF LARGE AMOUNTS OF DUST OR FUME. MOLYBDENUM IS GENERALLY CONSIDERED TO EXHIBIT A LOW ORDER OF TOXICITY.



NICKEL -- THE MOST COMMON AILMENT ARISING FROM NICKEL OR ITS COMPOUNDS IS AN ALLERGIC DERMATITIS KNOWN AS "NICKEL-ITCH", WHICH USUALLY OCCURS WHEN THE SKIN IS MOIST. GENERALLY, NICKEL AND MOST SALTS OF NICKEL DO NOT CAUSE SYSTEMIC POISONING, BUT NICKEL HAS BEEN IDENTIFIED AS A SUSPECTED CARCINOGEN. THERE CAN ALSO BE ADVERSE EFFECTS TO THE LUNGS AND NASAL CAVITIES.

SILICON -- ACCUMULATION OF SILICON IN THE LUNGS MAY BE RESPONSIBLE FOR BENIGN PNEUMOCONIOSIS, BUT IS NOT CONSIDERED TO BE RESPONSIBLE FOR PULMONARY FUNCTIONAL IMPAIRMENT OR RESPIRATORY SYMPTOMS.

TIN -- THE INHALATION OF INORGANIC TIN FUMES OR DUST MAY CAUSE AN APPARENT BENIGN PNEUMOCONIOSIS CALLED STANNOSIS WHICH IS REPORTED NOT TO BE DISABLING.

TITANIUM -- TITANIUM IS CONSIDERED A PHYSIOLOGICALLY INERT DUST. HOWEVER, HIGH CONCENTRATION OF OXIDES CAN CAUSE MECHANICAL IRRITATION OF EYES, NOSE AND THROAT.

ZINC (AS OXIDE) -- ZINC IS VERY LOW IN TOXICITY, BUT INHALATION OF FUMES MAY CAUSE METAL FUME FEVER. ONSET OF SYMPTOMS MAY BE DELAYED 4-12 HOURS AND INCLUDE IRRITATION OF THE NOSE, MOUTH AND THROAT, COUGHING, STOMACH PAIN, HEADACHE, NAUSEA, VOMITING, METALLIC TASTE, CHILLS, FEVER, PAINS IN THE MUSCLES AND JOINTS, THIRST, BRONCHITIS OR PNEUMONIA AND A BLUISH TINT TO THE SKIN. THESE SYMPTOMS GO AWAY IN 24-48 HOURS AND LEAVE NO EFFECT.

NOTE: ANTIMONY TRIOXIDE, BERYLLIUM, CADMIUM, CHROMIUM, COBALT-CHROMIUM ALLOY, LEAD AND NICKEL HAVE BEEN IDENTIFIED AS POTENTIAL HUMAN CARCINOGENS.

EMERGENCY FIRST AID PROCEDURES:

EYE CONTACT - FLUSH WELL WITH RUNNING WATER TO REMOVE PARTICULATE. OBTAIN MEDICAL ATTENTION.

SKIN CONTACT - VACUUM-OFF EXCESS DUST. WASH WELL WITH SOAP AND WATER.

INHALATION - REMOVE INDIVIDUAL TO PLACE OF FRESH AIR. OBTAIN MEDICAL ATTENTION.

INGESTION - SEEK MEDICAL ATTENTION IF LARGE QUANTITIES OF MATERIALS HAVE BEEN INGESTED.

