

HAYNES INTERNATIONAL INC SUB OF CABOT CORP -- R30605, HAYNES 25 ALLOY --
3439-00-554-5041

===== Product Identification =====

Product ID:R30605, HAYNES 25 ALLOY

MSDS Date:07/31/1999

FSC:3439

NIIN:00-554-5041

Status Code:A

MSDS Number: CLSHC

=== Responsible Party ===

Company Name:HAYNES INTERNATIONAL INC SUB OF CABOT CORP

Address:1020 W PARK AVE

Box:9013

City:KOKOMO

State:IN

ZIP:46902-9013

Country:US

Info Phone Num:317-456-6000

Emergency Phone Num:(800)424-9300

Resp. Party Other MSDS Num.:H2071-3

Chemtrec Ind/Phone:(800)424-9300

CAGE:80357

=== Contractor Identification ===

Company Name:HAYNES INTERNATIONAL INC SUB OF CABOT CORP

Address:1020 W PARK AVE

Box:9013

City:KOKOMO

State:IN

ZIP:46904-9013

Country:US

Phone:318-263-2002;765-456-6614

CAGE:80357

===== Composition/Information on Ingredients =====

Ingred Name:COBALT

CAS:7440-48-4

RTECS #:GF8750000

= Wt:51.

OSHA PEL:0.1 MG/M3

ACGIH TLV:0.02 MG/M3

Ingred Name:CHROMIUM

CAS:7440-47-3

RTECS #:GB4200000
= Wt:20.
OSHA PEL:1 MG/M3
ACGIH TLV:0.5 MG/M3
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:IRON
CAS:7439-89-6
RTECS #:NO4565500
Fraction by Wt: 3%MAX

Ingred Name:MANGANESE
CAS:7439-96-5
RTECS #:OO9275000
Fraction by Wt: 1.5%MAX
OSHA PEL:C5 MG/M3
ACGIH TLV:5 MG/M3

Ingred Name:NICKEL
CAS:7440-02-0
RTECS #:QR5950000
= Wt:10.
OSHA PEL:]
EPA Rpt Qty:100 LBS
DOT Rpt Qty:100 LBS

Ingred Name:SILICON
CAS:7440-21-3
RTECS #:VW0400000
= Wt:.4
OSHA PEL:15 MG/M3
ACGIH TLV:10 MG/M3

Ingr
ed Name:TUNGSTEN
CAS:7440-33-7
RTECS #:YO7175000
= Wt:15.
ACGIH TLV:5 MG/M3
ACGIH STEL:10 MG/M3

===== Hazards Identification =====

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES
Health Hazards Acute and Chronic:ACUTE: INHALATION-INHALED PARTICULATE
MAY IRRITATE THE RESPIRATORY TRACT. EXCESSIVE INHALATION OF
ALUMINUM, COBALT, COPPER, MANGANESE, NICKEL & ZINC CAN CAUSE
RESPIRATORY IR

IRITATION, COUGH, BRONCHITIS , CHILLS, "METAL FUME
FEVER" & ASTHMA-LIKE SYMPTOMS. SKIN-SKIN CONTACT WITH THESE
MATERIALS MAY CAUSE IRRITATION & IN SOME INDIVIDUALS AN ALLERGIC
DERMATITIS WHEN ELEMENTS SUCH AS CHROME, COBALT & NICKEL ARE
PRESENT. EYES-CONTACT WITH PARTICULATE METAL MAY INFLAME THE
CONJUNCTIVA. CHRONIC: RESPIRATORY DISEASE WITH SYMPTOMS RANGING
FROM SHORTNESS OF BREATH & COUGH TO PERMANENT DISABILITY DUE TO LOSS
OF LUNG FUNCTION; "SEE OTHER INFO"

Explanation of Carcinogenicity:CHROMIUM AND ITS COMPOUNDS, COBALT AND
ITS COMPOUNDS, AND NICKEL AND ITS COMPOUNDS ARE CLASSIFIED AS
CARCINOGENS BY NTP AND/OR IARC. WELDING FUMES-OSHA REQUIRES THAT
WELDING FUMES BE CONSIDERED AS CARCINOGENS BECAUSE THEY ARE
CLASSIFIED BY IARC.

Effects of Overexposure:INGESTION OF LARGE DOSES MAY CAUSE NAUSEA,
VOMITING, AND DIARRHEA.

Medical Condition Aggravated by Exposure:INDIVIDUALS WHO MAY HAVE HAD A
ALLERGIC REACTION OR SENSITIVITY TO METAL MAY
ENCOUNTER SKIN RASH
OR DERMATITIS. PERSONS WITH IMPAIRED PULMONARY FUNCTION MAY INCUR
FURTHER DISABILITY.

===== First Aid Measures =====

First Aid:INHALATION-REMOVE TO FRESH AIR. IF BREATHING HAS STOPPED,
PERFORM ARTIFICIAL RESPIRATION & OBTAIN MEDICAL AID AT ONCE.
INGESTION-NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.
CONTACT A POISON CONTROL CENTER (PCC). UNLESS THE PCC ADVISES
OTHERWISE, HAVE CONSCIOUS PERSON DRINK 1-
2 GLASSES OF WATER TO
DILUTE. DO NOT INDUCE VOMITING UNLESS LARGE AMOUNTS ARE INGESTED.
OBTAIN MEDICAL AID AT ONCE. SKIN-TREAT CUTS & ABRASIONS WITH
STANDARD FIRST AID. IF IRRITATION OCCURS, OBTAIN MEDICAL AID.
EYES-FLUSH DUST/POWDER FROM EYES WITH CLEAN WATER FOR 15 MINS. IF
IRRITATION PERSISTS, OBTAIN MEDICAL AID.

===== Fire Fighting Measures =====

Flash Point:NONE
Lower Limits:NONE
Upper Limits:NONE
Extinguishing Media:THESE ALLOYS IN

SOLID WROUGHT FORM ARE
NONCOMBUSTIBLE. USE EXTINGUISHING MEDIA APPROPRIATE TO THE
SURROUNDING FIRE.

Fire Fighting Procedures:TO EXTINGUISH A METAL POWDER FIRE USE DRY
SAND, DRY GRAPHITE OR OTHER CLASS "D" EXTINGUISHING POWDER.

Unusual Fire/Explosion Hazard:NO UNUSUAL FIRE OR EXPLOSION HAZARDS.

===== Accidental Release Measures =====

Spill Release Procedures:IN SOLID FORM THIS MATERIAL POSES NO SPECIAL
CLEAN-UP PROBLEMS. IF THIS MATERIAL IS IN POWDER
OR DUST FORM, DO
NOT DRY SWEEP, NOTIFY SAFETY PERSONNEL, CLEAN-UP SHOULD BE
CONDUCTED WITH A VACUUM SYSTEM UTILIZING A HIGH EFFICIENCY
PARTICULATE AIR (HEPA) FILTRATION SYSTEM.CAUTION SHOULD BE TAKEN TO
MINIMIZE AIRBORNE GENERATION OF POWDER OR DUST AND AVOID
CONTAMINATION OF AIR AND WATER.

===== Handling and Storage =====

Handling and Storage Precautions:HANDLING-THIS PRODUCT MUST BE HANDLED
ACCORDING TO THE SIZE, SHAPE AND QUANTITY
OF MATERIAL INVOLVED.

POWDERS SHOULD BE MOVE OR TRANSPORTED TO MINIMIZE SPILL OR RELEASE
POTENTIAL. AVOID DUST INHALATION AND EYE OR SKIN CONTACT.

Other Precautions:STORAGE-IN SOLID FORM THIS MATERIAL POSES NO SPECIAL
PROBLEMS. STORE METAL POWDER IN A DRY AREA AWAY FROM HEAT, IGNITION
SOURCES AND INCOMPATIBLES. **SPILL-CLEANUP PERSONNEL SHOULD PROTECT
AGAINST DUST INHALATION & SKIN OR EYE CONTACT. USE NON-SPARKING
TOOLS. PROPERLY LABEL ALL MATERIALS COLLECTED IN WASTE
CONTAINER.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:USE NIOSH APPROVED RESPIRATORS AS SPECIFIED BY
AN INDUSTRIAL HYGIENIST OR QUALIFIED SAFETY PROFESSIONAL. LUNG
FUNCTIONS TESTS ARE RECOMMENDED FOR USERS OF NEGATIVE PRESSURE
DEVICES. USE A FUME RESPIRATOR OR AN AIR SUPPLIED RESPIRATOR WHERE
LOCAL EXHAUST OR VENTILATION DOES NOT KEEP EXPOSURE BELOW THE OSHA
LIMITS FOR AIR CONTAMINATION.

Ventilation:LOCAL EXHAUST VENTILATION

SHOULD BE USED TO CONTROL
EXPOSURE TO AIRBORNE DUST AND FUME EMISSIONS NEAR THE SOURCE BELOW
THE EXPOSURE LIMITS CITED.

Protective Gloves:WEAR GLOVES TO PREVENT METAL CUTS & SKIN ABRASIONS.

Eye Protection:SAFETY GLASSES. (CONTACT LENSES SHOULD NOT BE WORN).

Other Protective Equipment:PROTECTIVE CLOTHING SUCH AS UNIFORMS,
DISPOSABLE COVERALLS, SAFETY SHOES, ETC.

Work Hygienic Practices:PRACTICE GOOD PERSONAL HYGIENE AFTER HANDLING
DUST OR POWDER FORMS OF THIS MATERIAL, ESPECIALLY
BEFORE EATING,
DRINKING, SMOKING OR APPLYING COSMETICS.

Supplemental Safety and Health

IF PRIOR DAMAGE OR DISEASE TO THE NEUROLOGIC (NERVOUS), CIRCULATORY,
HEMATOLOGIC (BLOOD) OR RENAL (KIDNEY) SYSTEMS HAS OCCURRED, PROPER
SCREENING OR EXAMINATIONS SHOULD BE CONDUCTED ON INDIVIDUALS WHO
MAY BE EXPOSED TO FURTHER RISK IF HANDLING AND USE OF THESE
MATERIAL CAUSE EXCESSIVE EXPOSURE.

===== Physical/Chemical Properties =====

HCC:N1

Melt/Freeze Pt:=-
1365.C, #####F

Vapor Pres:NA

Vapor Density:NA

Spec Gravity:0.330

pH:NA

Viscosity:NA

Evaporation Rate & Reference:NA

Solubility in Water:NONE

Appearance and Odor:SOLID-SILVER GRAY COLOR OR NO COLOR

Percent Volatiles by Volume:NONE

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

AVOID CONTACT WITH MINERAL ACIDS AN OXIDIZING AGENTS WHICH MAY GENERATE
HYDROGEN GAS; THE EVOLUTION OF HYDROGEN MAY BE AN EXPLOSION HAZARD.

Stabilit

y Condition to Avoid:THESE ALLOYS ARE STABLE MATERIALS.

Hazardous Decomposition Products:VARIOUS ELEMENTAL METALS & METAL
OXIDES MAY BE GENERATED FROM WELDING, CUTTING, GRINDING, MELTING OR
DROSS HANDLING OPERATIONS.

Conditions to Avoid Polymerization:DOES NOT OCCUR.

===== Toxicological Information =====

Toxicological Information:TOXICITY DATA: LD50 RAT (COBALT): 6171 MG/KG.
TERATOLOGY: RAT (NICKEL) ORAL: TDLO: 158 MG/KG. RAT (MOLYBDENUM)
ORAL: 5800

MG/KG GIVEN TO FEMAL 30 WEEKS PRIOR TO MATING AND DURING DAYS 1-20 OF PREGNACY CAUSED SPECIFIC MUSCULOSKELETAL SYSTEM DEVELOPMENT ABNORMALITIES. REPRODUCTION: RAT (MOLYBDENUM) ORAL 6050 MG/KG. GIVEN TO FEMAL 35 WEEKS PRIOR TO MATING PRODUCED PRE-, AND POST-IMPLANTATION MORTALITY. RAT (COBALT) UNSPECIFIED EXPOSURE ROUTE, 0.05 MG/KG CONTINUOUS, ADMINISTERED THROUGHOUT GASTATION TO FEMALE WAS EMBRYOTOXIC. MUTAGENICITY: HAMSTER (CHROMIUM III) LUNG CELL: 34 MG/L CAUSED SISTER CHROMATID EXCHANGE.

===== Ecological Information =====

Ecological:ECOTOXICITY: FEW PLANTS ACCUMULATE COBALT AT GREATER THAN 100 PPM, THE LEVEL AT WHICH SEVERE PHYTOXICITY WOULD OCCUR. THERE IS LITTLE TENDENCY FOR CHROMIUM III BIOACCUMULATION ALONG THE FOOD CHAIN. MOLYBDENUM: FATHEAD MINNOW), LC50: 370 MG/L/96 HOURS. TERRESTRIAL PLANTS CAN CONTAIN ENOUGH MOLYBDENUM TO BE TOXIC TO ANIMALS BUT STILL GROW NORMALLY. ENVIRONMENTAL DEGRADATION: IN WATER, COBALT IS ADSORBED GREATLY TO HYDROLYSATE OR OXIDATE SEDIMENTS. IT MAY BE TAKEN INTO SOLUTION IN SMALL AMOUNTS THROUGH BACTERIOLOGICAL ACTIVITY.

===== Disposal Considerations =====

Waste Disposal Methods:WHENEVER POSSIBLE, RECOVER ALLOYS FOR REUSE OR RECYCLING. IF NECESSARY, DISPOSE OF WASTE MATERIAL IN ACCORDANCE WITH LOCAL STATE OR FEDERAL REGULATIONS. FOR SPECIFIC LABELING, PACKING, STORAGE, TRANSPORTATION AND DISPOSAL PROCEDURES, CONTACT AN ENVIRONMENTAL ENGINEER OR CONSULTANT FAMILIAR WITH WASTE DISPOSAL REGULATIONS.

===== MSDS Transport Information =====

Transport Information:DOT SHIPPING REQUIREMENTS: SHIPPING NAME: NOT APPLICABLE. IDENTIFICATION NUMBER: NOT APPLICABLE. HAZARD CLASS: NOT APPLICABLE. LABEL(S) REQUIRED: NOT APPLICABLE.

===== Regulatory Information =====

SARA Title III Information:CHEMICALS SUBJECT TO T

HE REPORTING

REQUIREMENTS OF SECTION 313 OR TITLE II OF SARA AND 40 CFR PART 372: ALUMINUM (AS A FUME OR DUST), CHROMIUM, COBALT, COPPER, MANGANESE, NICKEL (AS A POWDER OR DUST), VANADIUM (AS A FUME OR DUST). SARA HAZARD CATERGORY: IMMEDIATE HAZARD AND DELAYED HAZARD.

Federal Regulatory Information:OSHA: LISTED AS AN AIR CONTAMINANT (29 CFR 1910.1000). HAZAEDOUS BY DEFINITION OF HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200). TSCA (TOXIC SUBSTANCE CONTROL ACT): COM

PONENTS OF THIS MATERIAL ARE LISTED ON THE TSCA INVENTORY.

CERCLA: HAZARDOUS SUBSTANCE (40 CFR 302.4): CHROMIUM (AS A POWDER): NICKEL (AS A POWDER OR DUST). EXTREMELY HAZARDOUS SUBSTANCE (40 CFR 355): NOT LISTED.

State Regulatory Information:CALIFORNIA'S "SAFE DRINKING WATER & TOXIC ENFORCEMENT ACT OF 1986" (PROPOSITION 65): DURING WELDING, THERMAL CUTTING AND MELTING THESE PRODUCTS MAY PRODUCE COBALT OXIDE, NICKEL COMPOUNDS, AND HEXAVAL E NT CHROMIUM COMPOUNDS WHICH ARE KNOWN TO

THE STATE OF CALIFORNIA TO CAUSE CANCER. PENNSYLVANIA WORKER AND COMMUNITY RIGHT TO KNOW: ALUMINUM, CHROMIUM AND VANADIUM (FUME OR DUST) ARE DESIGNATED ENVIRO NMENTAL HAZARDS ON THE HAZARDOUS SUBSTANCE LIST. TITLE 34, PART XIII, CHAPTER 323.

===== Other Information =====

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