

FORMALLOY S / FORMALLOY H (SOFT - HARD)

1. IDENTIFICATION OF THE PREPARATION AND COMPANY

EMERGENCY NUMBER +49 89 127 660 268

CAS Number N/A

EINECS Number N/A

IDENTIFICATION OF THE PRODUCT

Cobalt Based Alloy

Supplied as Metallic Ingots or Rods

IDENTIFICATION OF THE MANUFACTURER

GERMANY PRESIDENT DENTAL

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INTENDED USE OF PRODUCT: **MANUFACTURE OF REMOVABLE DENTAL APPLIANCES
(ALLOY IS REMELTED WHEN CASTING)**

2. COMPOSITION/ INFORMATION ON INGREDIENTS:

ELEMENT	% (Nominal)	CAS #	EINECS #	R PHRASE (See section 15 for full details)
Cobalt	Balance	7440-48-4	231-158-0	R42, R43
Chromium - (in supplied form)	25 - 35	7440-47-3	231-157-5	Not classified in supplied form
Molybdenum	4.5 - 6.5	7439-98-7	231-107-2	Not classified
Silicon	1.5 Max	7440-21-3	231-130-8	Not classified
Carbon	1.0 Max.	7440-44-0	231-153-3	Not classified
Manganese	1.0 Max	7439-96-5	231-105-1	Not classified
Iron	1.0 Max	7439-89-6	231-096-4	Not classified
Nickel	0.5 Max	7440-02-0	231-111-4	R40, R43

3. HAZARDS IDENTIFICATION

ELEMENT	CLASSIFICATION	ADVERSE EFFECTS		
		HUMAN EFFECTS	CHEMICAL HAZARDS	ENVIRONMENTAL EFFECTS
Cobalt	Xn – Harmful	known to cause “hardmetal disease”	None	None
Chromium - (in supplied form)	Not classified	None	None	Very toxic to aquatic organisms
Nickel	Xn – Cat 3 Carcinogen	Possibly cancer causing in humans	None	None
Fume - may contain Cr ⁶	T – Cat 2 Carcinogen if	Possibly cancer causing in humans	None	Very toxic to aquatic organisms

	Cr ⁶ is present		
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4. FIRST AID MEASURES

ROUTE OF EXPOSURE	IMMEDIATE MEDICAL ATTENTION REQUIRED		SYMPTOMS	EFFECTS
	YES	NO		
Skin Contact		X	Itching, Redness, Rash	Acute – Contact with dust may cause irritation & dermatitis. Chronic – Repeated or prolonged exposure may result in chrome holes, sensitisation and kidney lesions
Eye Contact		X	Itching, Redness Discharge, Blurred vision	Acute – May cause irritation Chronic – Repeated or prolonged exposure may cause conjunctivitis and lacrimation
Inhalation	X		Coughing and soreness. Short-term memory and attention span disturbances. Nose bleeds, Difficulty breathing, Generally feeling unwell	Acute – High concentrations of dust may cause irritation Chronic – Ulceration and perforation of the nasal septum, pulmonary fibrosis or pneumoconiosis and acute hepatitis with jaundice. May cause fibrosis
Ingestion	X		Absorption in sufficient amounts may result in dizziness, intense thirst, abdominal pain and vomiting	Excessive ingestion may result in kidney damage

5. FIRE FIGHTING MEASURES

Suitable extinguishing method	Water, CO ₂ , Powder are all safe
Extinguishing media which must not be used	None
Exposure hazards and combustion products	In the event of a fire this preparation may release a Toxic Fume
Special protective equipment for fire fighters	Suitable respiratory equipment should be used by fire fighters

6. ACCIDENTAL RELEASE MEASURES

Personal precautions	Use gloves to avoid skin contact Use a mask to avoid inhalation of any dust
Environmental precautions	Chrome, Cobalt, Nickel, and their compounds are List II substances under the Ground Water Directive. If the substance enters watercourses or sewers, inform the appropriate local water authority or National Regulatory body immediately
Methods for cleaning up	Manual clean up is recommended for solid pieces If excessive dust is produced, damp area down before cleaning up Always dispose of any waste as detailed in section 13

7. HANDLING AND STORAGE

Storage Should be stored in sealed containers with original labels intact. Store in a dry environment
 Ventilation Not applicable
 Handling Use gloves when handling this product.
 Do not eat or drink in the work area.
 Wash with soap and water after exposure.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Occupational Exposure Limits

IMPORTANT – Always ensure that exposure is below the recommendations set in the country of use. In the DE the limits are set by the H.S.E. and are published in a document called the EH40. These limits are published annually. In the U.S.A. refer to the document ANSI Z49.1: 1999 – Safety in Welding, Cutting and Allied Processes.

The GERMANY Exposure Limits are as follows:

Constituent	8Hr TWA (mg.m ⁻³)	Type – (MEL/OES)
Cobalt – Co	0.1	MEL
Chromium – Cr	0.5	OES
Chromium VI – Cr⁶	0.05	MEL
Carbon – C	3.5	OES
Molybdenum	5	OES
Nickel – Ni	0.1	MEL
Silicon – Si – (Respirable Dust)	4	OES
Fume	5	OES
Manganese	0.5	MEL

A suitable and sufficient risk assessment should be completed prior to use. This will determine the level of control measures required. A monitoring programme should be established and used where necessary in order to determine the extent of exposure of individuals in comparison with the Maximum Exposure Limit.

Personal Protection

Respiratory Protection

Weld Fume should be removed with Local Exhaust Ventilation – In case of insufficient ventilation suitable respiratory equipment should be used. Always use engineering control measures in preference to personal protective equipment.

Hand protection

Use suitable gloves to avoid contact with the skin and to protect from heat when melting.

Eye Protection

Use suitable eye protection to guard against the effect of melting.

Body Protection

Use suitable body protection to avoid the risk of skin damage when melting.

Health and Safety Controls in the Germany

The user should check the Health and Safety Executive’s guidance on respiratory protection, personal protective equipment and occupational exposure limits and ensure compliance with the Health and Safety at Work Act 1974 (as amended), the Control of Substances Hazardous to Health Regulations 2002 (as amended) and other health and safety legislation relative to the product.

MATERIAL SAFETY DATA SHEET

Environmental Exposure Controls in the GERMANY

The user should ensure that their processes are compliant with the provisions of the Environmental Protection Act 1990 and other legislation relevant to the intended use of the product. Further information can be obtained by contacting Envirowise on the Environment and Energy national helpline – 0800 585794 or on the website – www.envirowise.gov.uk.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Metallic rod or cylinders	Oxidising Properties:	Non oxidising
Odour:	None	Vapour Pressure:	No data available
pH:	Insoluble in water	Relative Density:	8.2 - 8.4 g/cm ³
Boiling Point::	No data available	Solubility:	Not soluble in water
Melting Range:	1170 - 1420°C	Partition Coefficient:	No data available
Flash point:	No data available	N-octane/water	No data available
Flammability:	Non flammable	Viscosity	Solid
Auto Flammability:	No data available	Vapour Density	No data available
Explosive Properties:	Non explosive	Evaporation Rate	No data available

10. STABILITY AND REACTIVITY

Conditions to avoid	None
Materials to avoid	None
Hazardous decomposition products	None

11. TOXICOLOGICAL INFORMATION

	Constituent	Co	Cr	C	Mo	Ni	Si	Mn
Acute Toxicity	Oral (LD50 rat – mg/kg bw)	>7000	No data	>10000	No data	>9000	>3000	No data
	Inhalation (LC50 rat – mg/l)	>10	No data	>64.4	No data	Not LC50 – other ca. .015	No data	No data
	Dermal (LD50 mice – mg/kg bw)	N/A	No data	No data	No data	N/A	No data	No data
Corrosivity/ irritation	Eye (Units set at test)	No data	No data	N/A	No data	No data	Slightly irritating	No data
	Skin (Units set at test)	No data	No data	No data	No data	No data	No data	No data
	Respiratory (Units set at test)	No data	No data	No data	No data	No data	No data	No data
Sensitisation	Skin	No data	No data	No data	No data	No data	No data	No data
	Respiratory	No data	No data	No data	No data	No data	No data	No data
Repeated dose toxicity		No data	No data	No data	No data	No data	No data	No data
Mutagenicity		No data	No data	No data	No data	No data	No data	No data
Carcinogenicity		No data	No data	No data	No data	Cat 3	No data	No data
Reproductive toxicity		No data	No data	No data	No data	None	No data	No data

12. ECOLOGICAL INFORMATION

Ecotoxicity	In the supplied form ecotoxicity is not applicable
Mobility	In the supplied form the product is insoluble and therefore immobile
Persistence and degradability	Not biodegradable in supplied form
Bio accumulative potential	In the supplied form the product is not bio accumulative
Other adverse effects	In the form of fume which contains Cr ⁶ it is classified as dangerous to the environment and therefore release must be regulated. Hexavalent chromium is phyto-toxic but normally accumulates in plant roots

13. DISPOSAL CONSIDERATIONS

Disposal in the GERMANY

Waste should be disposed of via a licensed Waste contractor. Do not discharge into local watercourses/ sewers or allow to contaminate underground water sources.

In disposing of waste from this preparation in the DE., the user should have regard to the Waste Framework Directive (75/442/EEC) and the Hazardous Waste Directive (91/689/EEC).

The user should also refer to the Environmental Protection Act 1990, the Environment Act 1995, the Special Waste Regulations 1996 and all associated statutory instruments and guidance. Any waste holder who is uncertain of which legislation applies should contact their local Environment Agency office.

Disposal outside of the GERMANY

The user should have regard to any local legislation which is applicable to the disposal of waste from this preparation.

14. TRANSPORT INFORMATION

Non-dangerous product for transport by land, sea and air.

Ensure product is packaged and labelled in accordance to the Chemicals (Hazard Information and Packaging for Supply) Regulations 1994

The user is advised to refer to the HSE guide HSG136 "Workplace Transport Safety: Guidance for Employers"

15. REGULATORY INFORMATION

Supply Classification

Not classified as a preparation in the supplied form

COBALT	Xn	R42/43 May cause sensitisation by inhalation and skin contact
CHROMIUM	Carc.Cat2 T,N	R49 May cause cancer by inhalation R43 May cause sensitisation by skin contact
NICKEL	Carc.Cat3 Xn	R50 Very Toxic to aquatic organisms R40 Possible risk of irreversible effects R43 May cause sensitisation by skin contact