

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet
Issue Date: 21-Oct-2009
C93177C

CHEMWATCH 4620-33
Version No:4
CD 2009/3 Page 1 of 6

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

DENTSPLY VITALLIUM SPECIAL ALLOY

PRODUCT USE

Partial denture manufacture.

SUPPLIER

Company: DENTSPLY (AUSTRALIA) PTY LTD

Address:

11- 21 Gilby Road

Mount Waverley

VIC 3149

AUSTRALIA

Telephone: 1300 55 29 29

Emergency Tel: 1300 55 29 29 (Hours of operation:

Monday - Friday 9:00 am - 5:00 pm EST; General

information only)

Fax: +61 3 9538 8260

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. NON-DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE

None

RISK

- Danger of cumulative effects.
- May cause SENSITISATION by inhalation and skin contact.
- May cause long- term adverse effects in the aquatic environment.

SAFETY

- Do not breathe dust.
- Avoid contact with eyes.
- Wear suitable protective clothing.
- To clean the floor and all objects contaminated by this material use water and detergent.
- Keep away from food drink and animal feeding stuffs.
- In case of contact with eyes rinse with plenty of water and contact Doctor or Poisons Information Centre.
- If swallowed IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
cobalt	7440-48-4	<65
chromium	7440-47-3	10-30
molybdenum	7439-98-7	<8
silicon	7440-21-3	0-1
nickel	7440-02-0	0-0.1
Note: During processing generates cobalt fume	7440-48-4	

Section 4 - FIRST AID MEASURES

SWALLOWED

- - For advice, contact a Poisons Information Centre or a doctor at once.
- Urgent hospital treatment is likely to be needed.

EYE

- If this product comes in contact with the eyes:
 - Immediately hold eyelids apart and flush the eye continuously with running water.
 - Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

continued...

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet
Issue Date: 21-Oct-2009
C93177C

CHEMWATCH 4620-33
Version No:4
CD 2009/3 Page 2 of 6
Section 4 - FIRST AID MEASURES

SKIN

- If skin contact occurs:
 - Immediately remove all contaminated clothing, including footwear.
 - Flush skin and hair with running water (and soap if available).

INHALED

- - If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

- Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Metal dust fires need to be smothered with sand, inert dry powders.

DO NOT USE WATER, CO2 or FOAM.

FIRE FIGHTING

- - Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves for fire only.

FIRE/EXPLOSION HAZARD

- - Metal powders, while generally regarded as non-combustible, may burn when metal is finely divided and energy input is high.
 - DO NOT use water or foam as generation of explosive hydrogen may result.
- Decomposition may produce toxic fumes of: metal oxides.
May emit poisonous fumes.
May emit corrosive fumes.

FIRE INCOMPATIBILITY

- None known.

HAZCHEM: None

PERSONAL PROTECTION

Glasses:
Full face- shield.
Gloves:
PVC chemical resistant type.
Respirator:
Particulate

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- - Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.

MAJOR SPILLS

- Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.

Personal Protective Equipment advice is contained in Section 8 of the MSDS.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- - Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

SUITABLE CONTAINER

- - Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

- - Reacts with acids producing flammable / explosive hydrogen (H2) gas.
- Avoid reaction with oxidising agents.

continued...

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet
Issue Date: 21-Oct-2009
C93177C

CHEMWATCH 4620-33
Version No:4
CD 2009/3 Page 3 of 6
Section 7 - HANDLING AND STORAGE

STORAGE REQUIREMENTS

- - Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA mg/m ³	Notes
Australia Exposure Standards	cobalt (Cobalt, metal dust & fume (as Co) (h))	0.05	Sen
Australia Exposure Standards	chromium (Chromium (metal))	0.5	
Australia Exposure Standards	silicon (Silicon (a))	10	(see Chapter 14)
Australia Exposure Standards	nickel (Nickel, metal)	1	Sen
Australia Exposure Standards	cobalt fume (Cobalt, metal dust & fume (as Co) (h))	0.05	Sen

PERSONAL PROTECTION

RESPIRATOR

Particulate

EYE

- - Chemical goggles.
- Full face shield may be required for supplementary but never for primary protection of eyes.

HANDS/FEET

- - Wear chemical protective gloves, eg. PVC.
- Wear safety footwear or safety gumboots, eg. Rubber.

NOTE:

- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

OTHER

- - Overalls.
- P.V.C. apron.

ENGINEERING CONTROLS

- Metal dusts must be collected at the source of generation as they are potentially explosive.
- Vacuum cleaners, of flame-proof design, should be used to minimise dust accumulation.
- Metal spraying and blasting should, where possible, be conducted in separate rooms. This minimises the risk of supplying oxygen, in the form of metal oxides, to potentially reactive finely divided metals such as aluminium, zinc, magnesium or titanium.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Solid metal, shaped as wire, plate, strip or in finished forms such as ingots or nuggets.

PHYSICAL PROPERTIES

Solid.
Does not mix with water.

Molecular Weight: Not Applicable
Specific Gravity (water=1): Not Available
pH (1% solution): Not Applicable
Evaporation Rate: Not Applicable
Lower Explosive Limit (%): Not Applicable
Decomposition Temp (°C): Not Applicable

Boiling Range (°C): Not Available

Solubility in water (g/L): Immiscible
Vapour Pressure (kPa): Not Applicable
Relative Vapour Density (air=1): Not Applicable
Upper Explosive Limit (%): Not Applicable
State: Solid

Melting Range (°C): Not Available
pH (as supplied): Not Applicable
Volatile Component (%vol): Not Applicable
Flash Point (°C): Not Applicable
Autoignition Temp (°C): Not Applicable
Viscosity: Not Applicable

continued...

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet
Issue Date: 21-Oct-2009
C93177C

CHEMWATCH 4620-33
Version No:4
CD 2009/3 Page 4 of 6

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- - Presence of incompatible materials.
- Product is considered stable.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

- Not applicable.

CHRONIC HEALTH EFFECTS

- Danger of cumulative effects.
- May cause SENSITISATION by inhalation and skin contact.

TOXICITY AND IRRITATION

- Not available. Refer to individual constituents.

COBALT:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 6170 mg/kg
Oral (rabbit) LDLo: 750 mg/kg

IRRITATION

Nil Reported

■ Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive.

Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis.

Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

CHROMIUM:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

- For chrome(III) and other valence states (except hexavalent):

For inhalation exposure, all trivalent and other chromium compounds are treated as particulates, not gases.

The mechanisms of chromium toxicity are very complex, and although many studies on chromium are available, there is a great deal of uncertainty about how chromium exerts its toxic influence.

No significant acute toxicological data identified in literature search.

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Tenth Annual Report on Carcinogens: Substance known to be Carcinogenic

[National Toxicology Program: U.S. Dep.

Gastrointestinal tumours, lymphoma, musculoskeletal tumours and tumours at site of application recorded.

MOLYBDENUM:

- No significant acute toxicological data identified in literature search.

SILICON:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LD50: 3160 mg/kg

IRRITATION

Nil Reported

NICKEL:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

Oral (rat) LDLo: 5000 mg/kg
Intravenous (dog) LD50: 40 mg/kg

IRRITATION

■ Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type.

WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.

Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen

[National Toxicology Program: U.S. Dep.

Oral (rat) TDLo: 500 mg/kg/5D-1

Inhalation (rat) TCLo: 0.1 mg/m³/24H/17W-C

CARCINOGEN

Cobalt metal without tungsten carbide

International Agency for Research on Cancer (IARC) Carcinogens

Group

2B

continued...

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet
Issue Date: 21-Oct-2009
C93177C

CHEMWATCH 4620-33
Version No:4
CD 2009/3 Page 5 of 6

Section 11 - TOXICOLOGICAL INFORMATION

Cobalt and cobalt compounds (NB: Evaluated as a group)	International Agency for Research on Cancer (IARC) Carcinogens	Group	2B
Cobalt and cobalt compounds (NB: Evaluated as a group)	International Agency for Research on Cancer (IARC) Carcinogens	Group	2B
Chromium, metallic	International Agency for Research on Cancer (IARC) Carcinogens	Group	3
Nickel, metallic and alloys	International Agency for Research on Cancer (IARC) Carcinogens	Group	2B
Cobalt metal without tungsten carbide	International Agency for Research on Cancer (IARC) Carcinogens	Group	2B
Cobalt and cobalt compounds (NB: Evaluated as a group)	International Agency for Research on Cancer (IARC) Carcinogens	Group	2B
REPROTOXIN nickel	ILO Chemicals in the electronics industry that have toxic effects on reproduction	Reduced fertility or sterility	A

Section 12 - ECOLOGICAL INFORMATION

May cause long-term adverse effects in the aquatic environment.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
Dentsply Vitallium Special Alloy		No data		
cobalt		No data		
chromium		No data		
molybdenum		No data		
silicon		No data		
nickel		No data		
cobalt fume		No data		

Section 13 - DISPOSAL CONSIDERATIONS

- - Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.
- Recycle wherever possible.
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION

HAZCHEM: None (ADG7)

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: ADG7, UN, IATA, IMDG

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: None

REGULATIONS

Regulations for ingredients

cobalt (CAS: 7440-48-4) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)",
"Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)", "Australia - Western Australia Hazardous Substances Prohibited for Specified Uses or Methods of Handling", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4", "International Agency for Research on Cancer (IARC) Carcinogens", "OECD Representative List of High Production Volume (HPV) Chemicals"

chromium (CAS: 7440-47-3) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - inorganic chemicals)",
"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIIG - inorganic chemicals)",
"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)",
"Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIIG)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural

continued...

DENTSPLY VITALLIUM SPECIAL ALLOY

Chemwatch Independent Material Safety Data Sheet

Issue Date: 21-Oct-2009

C93177C

CHEMWATCH 4620-33

Version No:4

CD 2009/3 Page 6 of 6

Section 15 - REGULATORY INFORMATION

uses (Stock)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality", "Australia - Western Australia Hazardous Substances Prohibited for Specified Uses or Methods of Handling", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "International Agency for Research on Cancer (IARC) Carcinogens", "OECD Representative List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

molybdenum (CAS: 7439-98-7) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality", "Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

silicon (CAS: 7440-21-3) is found on the following regulatory lists;

"Australia Exposure Standards", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals"

nickel (CAS: 7440-02-0) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (AQUA/1 to 6 - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (Domestic water supply - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (IRRIG - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (Aquatic habitat)", "Australia - Australian Capital Territory - Environment Protection Regulation: Pollutants entering waterways taken to cause environmental harm (IRRIG)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Domestic water quality", "Australia - Western Australia Hazardous Substances Prohibited for Specified Uses or Methods of Handling", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia High Volume Industrial Chemical List (HVICL)", "Australia Inventory of Chemical Substances (AICS)", "OECD Representative List of High Production Volume (HPV) Chemicals", "WHO Guidelines for Drinking-water Quality - Guideline values for chemicals that are of health significance in drinking-water"

cobalt fume (CAS: 7440-48-4) is found on the following regulatory lists;

"Australia - Australian Capital Territory - Environment Protection Regulation: Ambient environmental standards (STOCK - inorganic chemicals)", "Australia - Australian Capital Territory Environment Protection Regulation Pollutants entering waterways - Agricultural uses (Stock)", "Australia - Western Australia Hazardous Substances Prohibited for Specified Uses or Methods of Handling", "Australia Exposure Standards", "Australia Hazardous Substances", "Australia Inventory of Chemical Substances (AICS)", "Australia Standard for the Uniform Scheduling of Drugs and Poisons (SUSDP) - Schedule 4", "International Agency for Research on Cancer (IARC) Carcinogens", "OECD Representative List of High Production Volume (HPV) Chemicals"

No data for Dentsply Vitallium Special Alloy (CW: 4620-33)

Section 16 - OTHER INFORMATION

■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.

This document is copyright. Apart from any fair dealing for the purposes of private study, research, review or criticism, as permitted under the Copyright Act, no part may be reproduced by any process without written permission from CHEMWATCH. TEL (+61 3) 9572 4700.

Issue Date: 21-Oct-2009

Print Date: 21-Oct-2009

This is the end of the MSDS.