SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Trade name Titanium

Company
Neoss Ltd.
Windsor House
Cornwall road
Harrogate, HG1 2PW
www.neoss.com

Telephone +44 1423 817-733
Telefax +44 1423 817-744
Email info@neoss.com

Emergency telephone number Your local Neoss office
Use of the Substance /Preparation Production of machined parts

SECTION 2: COMPOSITION/ INFORMATION ON INGREDIENT

Titanium 75 % - 99.8 %. Formula Ti.
Details of alloy composition are given in the purchase specifications or test certificate and may include remaining percentages of Aluminium, Copper, Chromium, Iron, Manganese, Molybdenum, Nickel, Niobium, Palladium, Ruthenium, Tin, Vanadium, Zirconium and/or other elemental alloying additions.

SECTION 3: HAZARDS IDENTIFICATION

Titanium and Titanium base alloys are non toxic and safe to handle in solid forms.
Finely divided process residues such as sludges may contain oil, acids or other harmful process contaminants and should not be ingested, inhaled or allowed to come into contact with the skin or eyes.
If processed in such a manner as to produce fine dust or metal fume, it is recommended that adequate ventilation be provided to keep the airborne content of the metal and alloying elements within the limits set out in guidance note EH40 issued by the Health and Safety Executive (Ref 1&2)

SECTION 4: FIRST AID MEASURES

General Information
Under normal conditions, contact with this product in massive form is unlikely to cause a health hazard and the component elements are generally regarded as non-toxic.

Skin contact
Normal procedure for foreign object, wash with water.
Eye contact
Normal procedure for foreign object, wash with water.

SECTION 5: FIRE-FIGHTING MEASURES

Suitable extinguishing media:
Smother with large quantities of dry sand, dry titanium oxide powder or salt. Remove any nearby combustible material.
Extinguishing Material That Must Not Be Used For
Do not use water, foam, chemical liquid, gas or dry powder extinguishers.
Special Protective Equipment for Fire-fighters
Special measures are not necessary.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Spillage (of swarf, powder, fines et cetera)
Sweep material into clean drums.
Avoid sparks and all other forms of ignition.
Hose down with water any small amounts of material remaining.

SECTION 7: HANDLING AND STORAGE

Handling
Use of gloves advisable to avoid cuts.
Use eye protection when machining or grinding et cetera.
Do not accumulate large quantities of fines or machining residues. Dispose of these materials daily.
Avoid accumulation of dust, particularly in grinding and welding extraction equipment and ductwork.
Wet dust arrestors are advisable.
Personnel handling dry titanium powder should wear non sparking shoes, non combustible or flame retardant clothing and goggles or face shields (Ref.3).

Storage
Foil, Fine Wire, Turnings, Millings
Avoid sources of ignition.
Store away from other combustible materials.
Powder Residues, Grindings, Dust Extractor Sludges
Do not store. Dispose of as soon after arising as possible.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Respiratory Protection
Wear face protection when processing and polishing. Use suction unit.
Eye protection
Wear eye protection when processing and polishing
Hygiene Measures
Wash your hands after the work.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance - similar to stainless steel
Specific gravity 4.85g/cm3 subject to alloy composition
Melting point 1668˚C.
Titanium metal is rapidly dissolved by hydrofluoric acid or hydrofluoric-nitric acid mixtures.
Titanium enters into thermite type reactions with iron oxides. Explosive reactions have been reported whilst attempting to use titanium metal or powder in red fuming nitric acid.

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability: Risk of explosion in the presence of combustible materials
Conditions to Avoid: Keep away from sources of ignition. Store protected from heat. Keep away from combustible material.

SECTION 11: TOXICOLOGICAL INFORMATION

Titanium and Titanium base alloys are non toxic and safe to handle in solid forms.

SECTION 12: ECOLOGICAL INFORMATION

Scrap into containers suitable for reclamation or recovery.

SECTION 13: DISPOSAL CONSIDERATIONS

Fines, sludge residue and similar non-recyclable scrap should be burned in small quantities under controlled conditions or made safe by dilution with inert material (1 part sludge to 5 parts sand - Ref 3).

SECTION 14: TRANSPORT INFORMATION

Not classified as dangerous in the meaning of transport regulations

SECTION 15: REGULATORY INFORMATION

Labelling According To EC-Regulations
Other data According to the Dangerous Preparations Directive (1999/45/EG): no labelling

SECTION 16: OTHER INFORMATION

Precaution When Melting Titanium
Users whose process involves melting the metal in water cooled furnaces should note that molten titanium and water can react with explosive violence and should take precautions to avoid failure of the cooling system and provide protection for personnel in the event of an explosion (Ref 3).
Low melting point eutectics may form when titanium or its alloys are in contact with metals such as iron, nickel or copper at higher temperature.
Titanium will burn in the presence of dry chlorine at room temperature. (Ref 3).
Titanium should not be melted or welded other than under a protective argon atmosphere or under vacuum.

This information relates only to the specific material designated and may not to be valid for such material used in combination with any other materials or in any process. Such information is given in good faith being based on the latest information available and is to the best and belief accurate and reliable at the time of preparation. However no representation, warranty or guarantee is made as to its accuracy, reliability or completeness and we assumes no responsibility and disclaims any liability incurred in using this information. The product is supplied under condition that the user accepts the responsibility to satisfy himself so as to the suitability and completeness of such information for his own particular use.

Reference

1. Occupational Exposure Limits - Guidance Note EH40 Department of Employment (HMSO).
2. Documentation of the Threshold Limit for substances in Workroom Air Values - American Conference of Government Industrial Hygienists.
3. Production, Processing, Handling and Storage of Titanium Leaflet NFPA 481. National Fire Protection Associations (U.S.A.).