Dentsply Algin X Ultra

Dentsply Sirona Pty Ltd

Chemwatch: 33-1907 Version No: 4.1.1.1

Safety Data Sheet according to WHS and ADG requirements

SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Dentsply Algin X Ultra
Synonyms	Not Available
Other means of identification	Not Available
Relevant identified uses of the	substance or mixture and uses advised against
Relevant identified uses	For dental use only. For trained dental healthcare professional only.

Details of the supplier of the safety data sheet

Registered company name	Dentsply Sirona Pty Ltd
Address	11-21 Gilby Road Mount Waverley VIC 3149 Australia
Telephone	1300 55 29 29
Fax	1300 55 31 31
Website	www.dentsplysirona.com.au
Email	clientservices@dentsplysirona.com

Emergency telephone number

Association / Organisation	Dentsply Sirona Pty Ltd
Emergency telephone numbers	1300 55 29 29
Other emergency telephone numbers	Not Available

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. NON-DANGEROUS GOODS. According to the WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	0	
Toxicity	0	0 = Minimum
Body Contact	1	1 = Low 2 = Moderate
Reactivity	0	3 = High
Chronic	4	4 = Extreme

Poisons Schedule	Not Applicable
Classification ^[1]	Germ cell mutagenicity Category 2, Carcinogenicity Category 1A
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)

	· · · · · · · · · · · · · · · · · · ·	
SIGNAL WORD	WARNING	
Hazard statement(s)		
H341	Suspected of causing genetic defects.	
H350	May cause cancer.	
Precautionary statement(s) Pre	Precautionary statement(s) Prevention	
P201	Obtain special instructions before use.	
P281	Use personal protective equipment as required.	

Chemwatch Hazard Alert Code: 4

Issue Date: 01/11/2019

Print Date: 20/11/2019

S.GHS.AUS.EN

P308+P313	IF exposed or concerned: Get medical advice/attention.
recautionary statement(s) Sto	rage
recautionary statement(s) Sto P405	Store locked up.

Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

P501

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
14464-46-1	<30	cristobalite
68855-54-9	<20	diatomaceous earth, flux-calcined
68611-44-9	<5	silica amorphous, fumed
13463-67-7	<3	titanium dioxide

SECTION 4 FIRST AID MEASURES

Description of first aid measures

Eye Contact	 If this product comes in contact with the eyes: Wash out immediately with fresh 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. Seek medical attention without delay; if pain persists or recurs seek medical attention. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	 If skin contact occurs: Immediately remove all contaminated clothing, including footwear. Flush skin and hair with running water (and soap if available). Seek medical attention in event of irritation.
Inhalation	 If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.
Ingestion	If poisoning occurs, contact a doctor or Poisons Information Centre.

Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Water spray or fog.Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.
- Do not use a water jet to fight fire.

Special hazards arising from the substrate or mixture

Fire Incompatibility	None known.	
Advice for firefighters		
Fire Fighting	 When silica dust is dispersed in air, firefighters should wear inhalation protection as hazardous substances from the fire may be adsorbed on the silica particles. When heated to extreme temperatures, (>1700 deg.C) amorphous silica can fuse. Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire. Prevent, by any means available, spillage from entering drains or water courses. Use fire fighting procedures suitable for surrounding area. 	
Fire/Explosion Hazard	 Non combustible. Not considered a significant fire risk, however containers may burn. Combustion products include: silicon dioxide (SiO2) May emit poisonous fumes. May emit corrosive fumes. 	
HAZCHEM	Not Applicable	

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Personal precautions, protective equipment and emergency procedures

See section 8

Environmental precautions

See section 12

Methods and material for containment and cleaning up

Minor Spills	 Clean up all spills immediately. Avoid contact with skin and eyes. Wear impervious gloves and safety goggles. Trowel up/scrape up.
Major Spills	 Minor hazard. Clear area of personnel. Alert Fire Brigade and tell them location and nature of hazard. Control personal contact with the substance, by using protective equipment as required.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling Avoid all personal contact, including inhalation. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area. Prevent concentration in hollows and sumps. Store in original containers. Keep containers securely sealed. Store in a cool, dry, well-ventilated area. Store away from incompatible materials and foodstuff containers. Store away from incompatible materials and foodstuff containers. Store away from incompatibilities Conditions for safe storage, incompatibilities Image: Condition of the second secon

Suitable container	Base and catalyst are held separately within a single cartridge dispenser unit and mixed together when dispensing. ▶ Packaging as recommended by manufacturer.	
Storage incompatibility	Avoid reaction with oxidising agents	

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	cristobalite	Cristobalite (respirable dust)	0.1 mg/m3	Not Available	Not Available	See Silica -Crystalline
Australia Exposure Standards	cristobalite	Silica - Crystalline: Cristobalite (respirable dust)	0.1 mg/m3	Not Available	Not Available	Not Available
Australia Exposure Standards	titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1		TEEL-2	TEEL-3
cristobalite	Cristobalite	0.075 m	g/m3	33 mg/m3	200 mg/m3
silica amorphous, fumed	Silica, amorphous fumed	Silica, amorphous fumed 18 mg/m3		100 mg/m3	630 mg/m3
titanium dioxide	Titanium oxide; (Titanium dioxide)	Titanium oxide; (Titanium dioxide) 30 mg/m3		330 mg/m3	2,000 mg/m3
Ingredient	Original IDLH		Revised IDLH		
cristobalite	Not Available		Not Available		
diatomaceous earth, flux- calcined	Not Available		Not Available		
silica amorphous, fumed	Not Available		Not Available		
titanium dioxide	5,000 mg/m3		Not Available		

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
diatomaceous earth, flux- calcined	E	≤ 0.01 mg/m³
Notes:	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which correspond to a range of exposure concentrations that are expected to protect worker health.	

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Exposure controls

Appropriate engineering controls	Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are: Process controls which involve changing the way a job activity or process is done to reduce the risk. Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.
Personal protection	
Eye and face protection	 Safety glasses with side shields. Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	Wear protective gloves, e.g. PVC.
Body protection	See Other protection below
Other protection	 Overalls. P.V.C. apron. Barrier cream.

Respiratory protection

Particulate. (AS/NZS 1716 & 1715, EN 143:2000 & 149:001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required. Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	-AUS P2	-	-PAPR-AUS / Class 1 P2
up to 50 x ES	-	-AUS / Class 1 P2	-
up to 100 x ES	-	-2 P2	-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

None under normal operating conditions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Colured viscous paste with a spearmint odour; does not mix with water. Base is light blue coloured. Catalyst is off-white.		
Physical state	Non Slump Paste	Relative density (Water = 1)	>=1.2
Odour	Not Available	Partition coefficient n- octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water	Immiscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

 Reactivity
 See section 7

 Chemical stability

 • Unstable in the presence of incompatible materials.

 • Product is considered stable.

 • Hazardous polymerisation will not occur.

Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	Not normally a hazard due to non-volatile nature of product		
Ingestion	The material has NOT been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.		
Skin Contact	There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons. Irritation and skin reactions are possible with sensitive skin Open cuts, abraded or irritated skin should not be exposed to this material Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.		
Eye	There is some evidence to suggest that this material can cause eye	irritation and damage in some persons.	
Chronic	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Silica in this material is bound in a rubbery soft matrix and does not present an inhalation exposure hazard.		
Dentsply Algin X Ultra	τοχιςιτγ	IRRITATION	
Denisply Algin X Olira	Oral (Rat) LD50: >2000 mg/kg ^[2]	Not Available	
cristobalite	TOXICITY	IRRITATION	
Chistobalite	Not Available	Not Available	
diatomaceous earth, flux-	TOXICITY	IRRITATION	
calcined	Oral (rat) LD50: >2000 mg/kg ^[1]	Not Available	
	ΤΟΧΙΟΙΤΥ	IRRITATION	
silica amorphous, fumed	Inhalation (rat) LC50: 0.45 mg/l/4H ^[2]	Not Available	
	Oral (rat) LD50: >5000 mg/kg ^[2]		
	тохісітү	IRRITATION	
	dermal (hamster) LD50: >=10000 mg/kg ^[2]	Eye: no adverse effect observed (not irritating) ^[1]	
titanium dioxide	Oral (rat) LD50: >2000 mg/kg ^[1]	Skin (human): 0.3 mg /3D (int)-mild *	
		Skin: no adverse effect observed (not irritating) ^[1]	

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

CRISTOBALITE	Inhalation (human) TCLo: 16 mppcf*/8H/17.9y-I * Millions of particles per cubic foot WARNING: For inhalation exposure <u>ONLY</u> : This substance has been classified by the IARC as Group 1: CARCINOGENIC TO HUMANS The International Agency for Research on Cancer (IARC) has classified occupational exposures to respirable (<5 um) crystalline silica as being carcinogenic to humans. This classification is based on what IARC considered sufficient evidence from epidemiological studies of humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease. Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.
SILICA AMORPHOUS, FUMED	For silane, dichloro-methyl-, reaction products with silica: Acute oral toxicity is very low for treated silica. Animals who inhaled these substances recovered from inflammatory changes in the airway when exposure ended. Repeated inhalation in animals caused inflammation and scarring of the lungs with enlarged lymph nodes. Treated silica does not cause mutations or genetic damage and has not been shown to cause cancer.
TITANIUM DIOXIDE	 * IUCLID Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation. Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. It penetrated only the outermost layer of the skin, suggesting that healthy skin may be an effective barrier. No significant acute toxicological data identified in literature search. The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

	The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.		
DIATOMACEOUS EARTH, FLUX-CALCINED & SILICA AMORPHOUS, FUMED	For silica amorphous: When experimental animals inhale synthetic amorphous silica (SAS) dust, it dissolves in the lung fluid and is rapidly eliminated. If swallowed, the vast majority of SAS is excreted in the faeces and there is little accumulation in the body. Following absorption across the gut, SAS is eliminated via urine without modification in animals and humans. SAS is not expected to be broken down (metabolised) in mammals.		
Acute Toxicity	×	Carcinogenicity	×
Skin Irritation/Corrosion	×	Reproductivity	×
Serious Eye Damage/Irritation	×	STOT - Single Exposure	×
Respiratory or Skin sensitisation	×	STOT - Repeated Exposure	×
Mutagenicity	✓	Aspiration Hazard	×
	Legend: X − Data either not available or does not fill the criteria for classificatio ✓ − Data available to make classification		

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Dentsply Algin X Ultra	Not Available	Not Available	Not Available	Not Available	Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
cristobalite	Not Available	Not Available	Not Available	Not Available	Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
diatomaceous earth, flux- calcined Not Availa	Not Available	Not Available	Not Available	Not Available	Not Available
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
silica amorphous, fumed	NOEC	24	Crustacea	>=10000mg/L	1
	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURC
	LC50	96	Fish	>1-mg/L	2
titanium dioxide	EC50	48	Crustacea	>1-mg/L	2
	EC50	72	Algae or other aquatic plants	5.83mg/L	4
	NOEC	336	Fish	0.089mg/L	4
Legend:	=		CHA Registered Substances - Ecotoxicological In	Formation Acceptio Toxici	

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
titanium dioxide	HIGH	HIGH
Bioaccumulative potential		
Ingredient	Bioaccumulation	
titanium dioxide	LOW (BCF = 10)	
Mobility in soil		
Ingredient	Mobility	
titanium dioxide	LOW (KOC = 23.74)	

SECTION 13 DISPOSAL CONSIDERATIONS

aste treatment methods		
Product / Packaging disposal	Recycle wherever possible or consult manufacturer for recycling options.	

- Consult State Land Waste Management Authority for disposal.
 - Bury residue in an authorised landfill.
 - Recycle containers if possible, or dispose of in an authorised landfill.

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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant NO HAZCHEM

Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION

Safety, health and environmental regulations / legislation specific for the substance or mixture

CRISTOBALITE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Exposure Standards

Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

Australia Inventory of Chemical Substances (AICS) Australia Model Work Health and Safety Regulations 2019 - Hazardous chemicals (other than lead) requiring health monitoring

DIATOMACEOUS EARTH, FLUX-CALCINED IS FOUND ON THE FOLLOWING REGULATORY LISTS

Australia Inventory of Chemical Substances (AICS)

SILICA AMORPHOUS, FUMED IS FOUND ON THE FOLLOWING REGULATORY LISTS Australia Inventory of Chemical Substances (AICS)

TITANIUM DIOXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

Austrolia	Evenouro	Standards
Australia	EXDOSULE	Stanuarus

Australia Inventor	v of Chemical Substances (AICS)	

GESAMP/EHS Composite List - GESAMP Hazard Profiles

IMO IBC Code Chapter 17: Summary of minimum requirements

IMO MARPOL (Annex II) - List of Noxious Liquid Substances Carried in Bulk International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

National Inventory Status

National Inventory	Status		
Australia - AICS	Yes		
Canada - DSL	Yes		
Canada - NDSL	No (silica amorphous, fumed; diatomaceous earth, flux-calcined; cristobalite)		
China - IECSC	Yes		
Europe - EINEC / ELINCS / NLP	Yes		
Japan - ENCS	No (silica amorphous, fumed; diatomaceous earth, flux-calcined)		
Korea - KECI	Yes		
New Zealand - NZIoC	Yes		
Philippines - PICCS	Yes		
USA - TSCA	Yes		
Taiwan - TCSI	Yes		
Mexico - INSQ	Yes		
Vietnam - NCI	Yes		
Russia - ARIPS	Yes		
Legend:	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)		

SECTION 16 OTHER INFORMATION

Revision Date 01/11/	11/2019
Initial Date 05/10/	10/2012

SDS Version Summary

Version	Issue Date	Sections Updated
2.1.1.1	05/10/2012	Acute Health (inhaled), Classification, First Aid (swallowed), Toxicity and Irritation (Toxicity Figure)
4.1.1.1	01/11/2019	One-off system update. NOTE: This may or may not change the GHS classification

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.

The 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. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC-TWA: Permissible Concentration-Time Weighted Average PC-STEL: Permissible Concentration-Short Term Exposure Limit IARC: International Agency for Research on Cancer ACGIH: American Conference of Governmental Industrial Hygienists STEL: Short Term Exposure Limit TEEL: Temporary Emergency Exposure Limit. IDLH: Immediately Dangerous to Life or Health Concentrations OSF: Odour Safety Factor NOAEL :No Observed Adverse Effect Level LOAEL: Lowest Observed Adverse Effect Level TLV: Threshold Limit Value LOD: Limit Of Detection OTV: Odour Threshold Value BCF: BioConcentration Factors BEI: Biological Exposure Index

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