Safety Data Sheet according to Singapore Standard SS 586.

BONDERITE M-CR 1001 AERO known as ALODINE 1001

SDS No. : 191685
V001.3
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Section 1. Identification of the substance/preparation and of the company/undertaking

Product name: BONDERITE M-CR 1001 AERO known as ALODINE 1001

Other means of identification: BONDERITE M-CR 1001 AERO
Product code: IDH594693
Recommended use of the chemical and restrictions on use

Intended use: Conversion coating

Identification of manufacturer, importer or distributor
Importer: Henkel Singapore Pte Ltd 401 Commonwealth Drive, #03-01/02, Haw Par Technocentre, Singapore. 149598
Phone : +65 62660100 Fax : +65 62661161

E-mail address of person responsible for Safety Data Sheet: ap-ua-psra.sea@henkel.com

Emergency Telephone for Chemical Accidents: FOR EMERGENCIES ONLY (Spill, major leak, Fire, Exposure, or Accident). Call: +65 6424 7016

Section 2. Hazards identification

GHS Classification:

Hazard Class	Hazard Category
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1A
Chronic hazards to the aquatic environment	Category 3

GHS label elements:

Hazard pictogram:



Signal word: Danger

Hazard statement: H340 May cause genetic defects.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.

Precaution:

Prevention: P201 Obtain special instructions before use.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Response: P308+P313 IF exposed or concerned: Get medical advice/attention.

Disposal: P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Section 3. Composition / information on ingredients

Substance or Mixture:
Mixture

Declaration of hazardous chemical:

Hazard component CAS-No.	Content	GHS Classification
Chromic acid 7738-94-5	0.1- 1 %	Oxidizing solids 1 H271 Acute toxicity 3; Oral H301 Acute toxicity 2; Inhalation H330 Acute toxicity 2; Dermal H310 Skin corrosion 1A H314 Respiratory Sensitization 1 H334 Skin Sensitization 1 H317 Germ cell mutagenicity 1B H340 Carcinogenicity 1A H350 Reproductive toxicant. 2 H361 Target Organ Systemic Toxicant - Repeated exposure 1 H372 Acute hazards to the aquatic environment 1 H400 Chronic hazards to the aquatic environment 1 H410
Dipotassium hexafluorozirconate 16923-95-8	0.1- 1 %	Acute toxicity 3; Oral H301 Serious eye damage/eye irritation 1 H318

Section 4. First aid measures

Inhalation: Fresh air, oxygen supply, warmth; seek specialist medical attention.

Skin contact: Rinse with running water and soap. Apply replenishing cream. Change all contaminated clothing.
In case of adverse health effects seek medical advice.

Eye contact:	Rinse immediately with plenty of running water (for 10 minutes), seek medical attention from a specialist.
Ingestion:	Rinse mouth, drink 1-2 glasses of water, do not induce vomiting, consult a doctor.
Indication of immediate medical attention and special treatment needed:	See section: Description of first aid measures

Section 5. Fire fighting measures

Suitable extinguishing media:	All common extinguishing agents are suitable.
Specific hazards arising from the chemical:	Formation of toxic gases is possible during heating or in fires.
Special protection equipment and precautions for firefighters:	Wear protective equipment. Wear self-contained breathing apparatus.
Additional fire fighting advice:	In case of fire, keep containers cool with water spray.

Section 6. Accidental release measures

Personal precautions:	Avoid contact with skin and eyes.
Environmental precautions:	Do not empty into drains / surface water / ground water.
Clean-up methods:	Take up with liquid-absorbing material (sand). Dispose of contaminated material as waste according to Section 13.

Section 7. Handling and storage

Handling:	Avoid skin and eye contact. Ensure that workrooms are adequately ventilated. See advice in section 8
Storage:	Ensure good ventilation/extraction.Store in a cool, dry place.

Section 8. Exposure controls / personal protection

Components with specific control parameters for workplace:

Hexavalent chromium inorganic compounds, including Chromite ore processing, as Cr (VI), inhalable fraction 7738-94-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.0002
	Remarks	ACGIH
Chromium metal and inorganic compounds: Water soluble Cr VI compounds, as Cr 7738-94-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.05
	Remarks	SG OEL
Hexavalent chromium inorganic compounds, including Chromite ore processing, as Cr (VI), inhalable fraction 7738-94-5	**Value type**	Short Term Exposure Limit (STEL):
	mg/m³	0.0005
	Remarks	ACGIH
Hexavalent chromium water soluble inorganic compounds, including Chromite ore processing, as Cr (VI), inhalable fraction 7738-94-5	**Value type**	Skin designation:
	Remarks	ACGIH Danger of cutaneous absorption
Hexavalent chromium water soluble inorganic compounds, including Chromite ore processing, as Cr (VI), inhalable fraction 7738-94-5	**Value type**	Short Term Exposure Limit (STEL):
	mg/m³	0.0005
	Remarks	ACGIH
Hexavalent chromium water soluble inorganic compounds, including Chromite ore processing, as Cr (VI), inhalable fraction 7738-94-5	**Value type**	Time Weighted Average (TWA):
	mg/m³	0.0002
	Remarks	ACGIH
ZIRCONIUM AND COMPOUNDS, AS ZR 16923-95-8	**Value type**	Time Weighted Average (TWA):
	mg/m³	5
	Remarks	ACGIH
ZIRCONIUM AND COMPOUNDS, AS ZR 16923-95-8	**Value type**	Time Weighted Average (TWA):
	mg/m³	5
	Remarks	SG OEL
ZIRCONIUM AND COMPOUNDS, AS ZR 16923-95-8	**Value type**	Short Term Exposure Limit (STEL):
	mg/m³	10
	Remarks	ACGIH
Fluorides, as F 16923-95-8	**Value type**	Time Weighted Average (TWA):
	mg/m³	2.5
	Remarks	ACGIH
ZIRCONIUM AND COMPOUNDS, AS ZR 16923-95-8	**Value type**	Short Term Exposure Limit (STEL):
	mg/m³	10
	Remarks	SG OEL
FLUORIDES, AS F 16923-95-8	**Value type**	Time Weighted Average (TWA):
	mg/m³	2.5
	Remarks	SG OEL

Respiratory protection: In case of aerosol formation, we recommend wearing of appropriate respiratory protection equipment with ABEK P2 filter (EN 14387).

	This recommendation should be matched to local conditions.
Hand protection:	Chemical-resistant protective gloves (EN 374). Suitable materials for short-term contact or splashes (recommended: at least protection index 2, corresponding to > 30 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) Suitable materials for longer, direct contact (recommended: protection index 6, corresponding to > 480 minutes permeation time as per EN 374): Polychloroprene (CR; >= 1 mm thickness) or natural rubber (NR; >=1 mm thickness) This information is based on literature references and on information provided by glove manufacturers, or is derived by analogy with similar substances. Please note that in practice the working life of chemical-resistant protective gloves may be considerably shorter than the permeation time determined in accordance with EN 374 as a result of the many influencing factors (e.g. temperature). If signs of wear and tear are noticed then the gloves should be replaced.
Eye protection:	Protective goggles Protective eye equipment should conform to EN166.
Body protection:	Suitable protective clothing Protective clothing should conform to EN 14605 for liquid splashes or to EN 13982 for dusts.
Engineering controls:	Provide local and general exhaust ventilation to effectively remove and prevent buildup of any vapors or mists generated from the handling of this product.
General protection and hygiene measures:	The workplace should be equipped with an emergency shower and eye-rinsing facility.
Hygienic measures:	Wash hands before work breaks and after finishing work. Do not eat, drink or smoke while working. Take off contaminated clothing and wash before reuse.

Section 9. Physical and chemical properties

Appearance:	Orange liquid
Odor:	None
Odor threshold (CA):	No data available.
pH:	2 - 3
Melting point / freezing point:	No data available.
Specific gravity:	1.00 - 1.01
Boiling point:	100.0 °C (212 °F)
Flash point:	Not applicable
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Lower explosive limit:	No data available.
Upper explosive limit:	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Density:	No data available.
Solubility:	Miscible
Partition coefficient: n-octanol/water:	No data available.
Auto ignition:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.
VOC content:	No data available.

Section 10. Stability and reactivity

Reactivity/Incompatible materials: Reaction with strong bases
Reaction with reducing agents.

Chemical stability: Stable under recommended storage conditions.

Conditions to avoid: No decomposition if used according to specifications.

Hazardous decomposition products: None if used for intended purpose.
In case of fire toxic gases can be released.

Section 11. Toxicological information

Oral toxicity: Acute toxicity estimate (ATE) : > 2,000 mg/kg
Method: Calculation method

Inhalative toxicity: Acute toxicity estimate (ATE) : > 20 mg/l
Exposure time: 4 h
Test atmosphere: Vapor.
Method: Calculation method

Dermal toxicity: Acute toxicity estimate (ATE) : > 2,000 mg/kg
Method: Calculation method

Symptoms of Overexposure**:** None known.

Acute oral toxicity:

Dipotassium hexafluorozirconate 16923-95-8	Value type	LD50
	Value	> 25 - 200 mg/kg
	Species	rat
	Method	OECD Guideline 401 (Acute Oral Toxicity)
Dipotassium hexafluorozirconate 16923-95-8	Value type	Acute toxicity estimate (ATE)
	Value	51 mg/kg
	Species	
	Method	Expert judgement

Serious eye damage/irritation:

Dipotassium hexafluorozirconate 16923-95-8	Result	Category 1 (irreversible effects on the eye)
	Exposure time	
	Species	rabbit
	Method	OECD Guideline 405 (Acute Eye Irritation / Corrosion)

Section 12. Ecological information

General ecological information: Do not empty into drains / surface water / ground water.

Ecotoxicity: H412 Harmful to aquatic life with long lasting effects.

Toxicity:

Chromic acid 7738-94-5	Value type	LC50
	Value	44.25 mg/l
	Acute Toxicity Study	Fish

	Exposure time	96 h
	Species	Carassius auratus
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
	Value type	NOEC
	Value	0.114 mg/l
	Acute Toxicity Study	Fish
	Exposure time	60 h
	Species	Oncorhynchus mykiss
	Method	not specified
Chromic acid 7738-94-5	Value type	EC50
	Value	1.18 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	24 h
	Species	Daphnia sp.
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Chromic acid 7738-94-5	Value type	EC50
	Value	0.29 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	0.071 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Scenedesmus subspicatus (new name: Desmodesmus subspicatus)
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
Dipotassium hexafluorozirconate 16923-95-8	Value type	LC50
	Value	172.4 mg/l
	Acute Toxicity Study	Fish
	Exposure time	96 h
	Species	Brachydanio rerio (new name: Danio rerio)
	Method	OECD Guideline 203 (Fish, Acute Toxicity Test)
Dipotassium hexafluorozirconate 16923-95-8	Value type	EC50
	Value	151.4 mg/l
	Acute Toxicity Study	Daphnia
	Exposure time	48 h
	Species	Daphnia magna
	Method	OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)
Dipotassium hexafluorozirconate 16923-95-8	Value type	EC50
	Value	10.66 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)
	Value type	EC10
	Value	1.63 mg/l
	Acute Toxicity Study	Algae
	Exposure time	72 h
	Species	Pseudokirchneriella subcapitata
	Method	OECD Guideline 201 (Alga, Growth Inhibition Test)

Section 13. Disposal considerations

Product

Method of disposal: Dispose of in accordance with local and national regulations.

Packaging

Disposal of uncleaned packages: Packaging that cannot be cleaned are to be disposed of in the same manner as the product.

Section 14. Transport information

Road transport ADR:
Not dangerous goods

Railroad transport RID:
Not dangerous goods

Inland water transport ADN:
Not dangerous goods

Marine transport IMDG:
Not dangerous goods

Air transport IATA:
Not dangerous goods

Section 15. Regulatory information

Regulatory Information: Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020.
Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024

Global inventory status:

Regulatory list	Notification
TCSI	yes
TSCA	yes
AIIC	yes
DSL	yes
ENCS (JP)	yes
ISHL (JP)	yes
KECI (KR)	yes
PICCS (PH)	yes
IECSC	yes

Section 16. Other information

Disclaimer: This Safety Data Sheet has been generated based on Workplace Safety And Health Act (Chapter 354A, Section 40B) Workplace Safety And Health (Approved Codes of Practice) Notification 2020 and Workplace Safety And Health Act (Chapter 354A, Section 65) Workplace Safety And Health (General Provisions) (Amendment No.2) Regulations 2024 only. No warranty or representation of any kind is given with respect to the substantive or export laws of any other jurisdiction or country. Please confirm that the information provided herein conforms to the substantive export or other law of any other jurisdiction prior to export. Please contact Henkel Product Safety and Regulatory Affairs for additional assistance.This information is based on our current level of knowledge and relates to the product in the state in which it is delivered. It is intended to describe our products from the point of view of safety requirements and is not intended to guarantee any particular properties.
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