1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

1.1 Product identifier

Product name: BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S
Synonym(s): ALODINE 1200S • NSN: 8030-01-642-8676 • NSN: 8030-66-027-1950
1200S ALODINE • 160048 - SDS NUMBER • 169308 - PRODUCT CODE • 1939161 - PRODUCT CODE • 205803 - IDH NUMBER • ALODINE 1200S (FORMERLY) • BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S (FORMERLY) • HENKEL ALODINE 1200S 20 KG

1.2 Uses and uses advised against

Use(s): COATING • CONVERSION COATING • METAL COATING

1.3 Details of the supplier of the safety data sheet

Supplier name: HENKEL AUSTRALIA PTY LTD
Address: 135 - 141 Canterbury Rd, Kilsyth, VIC, Australia, 3137
Telephone: (03) 9724 6444
Fax: (03) 9728 5877
Email: msds@au.henkel.com
Website: http://www.loctite.com.au

1.4 Emergency telephone number(s)

Emergency: 1800 032 379; (03) 9724 6556

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

CLASSIFIED AS HAZARDOUS ACCORDING TO SAFE WORK AUSTRALIA CRITERIA
GHS Classification(s): Oxidizing Solids: Category 1
Acute Toxicity: Oral: Category 3
Acute Toxicity: Skin: Category 3
Skin Corrosion/Irritation: Category 1A
Skin Sensitisation: Category 1
Acute Toxicity: Inhalation: Category 2
Respiratory Sensitisation: Category 1
Germ Cell Mutagenicity: Category 1B
Carcinogenicity: Category 1A
Toxic to Reproduction: Category 2
Specific Target Organ Systemic Toxicity (Repeated Exposure): Category 1
Aquatic Toxicity (Chronic): Category 1

2.2 Label elements

Signal word: DANGER

Hazard statement(s):
H271 May cause fire or explosion; strong oxidizer.
H301 Toxic if swallowed.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
Product name: BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

H330 Fatal if inhaled.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.
H410 Very toxic to aquatic life with long lasting effects.

Prevention statement(s)

P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P220 Keep/Store away from clothing/incompatible materials/combustible materials.
P221 Take any precaution to avoid mixing with combustibles/incompatible materials.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P272 Contaminated work clothing should not be allowed out of the workplace.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P283 Wear fire/flame resistant/retardant clothing.
P284 Wear respiratory protection.

Response statement(s)

P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P306 + P360 IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P308 + P313 IF exposed or concerned: Get medical advice/attention.
P310 Immediately call a POISON CENTER or doctor/physician.
P320 Specific treatment is urgent - see first aid instructions.
P363 Wash contaminated clothing before reuse.
P370 + P378 In case of fire: Use appropriate media for extinction.
P371 + P380 + P375 In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.
P391 Collect spillage.

Storage statement(s)

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

Disposal statement(s)

P501 Dispose of contents/container in accordance with relevant regulations.

2.3 Other Hazards

No information provided.

3. COMPOSITION/ INFORMATION ON INGREDIENTS

3.1 Substances / Mixtures

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS number</th>
<th>EC number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHROMIUM TROXIDE</td>
<td>1333-82-0</td>
<td>215-607-8</td>
<td>30 - 60%</td>
</tr>
<tr>
<td>TRIPOTASSIUM HEXACYANOFERRATE</td>
<td>13746-66-2</td>
<td>237-323-3</td>
<td>10 - 30%</td>
</tr>
<tr>
<td>POTASSIUM FLUOROZIRCONATE</td>
<td>16923-95-8</td>
<td>240-985-6</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>SODIUM FLUORIDE</td>
<td>7681-49-4</td>
<td>231-667-8</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>
Product name: BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>CAS number</th>
<th>EC number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>NON HAZARDOUS INGREDIENTS</td>
<td>Not Available</td>
<td>Not Available</td>
<td>remainder</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

Eye: If in eyes, hold eyelids apart and flush continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre, a doctor, or for at least 15 minutes.

Inhalation: If inhaled, remove from contaminated area. To protect rescuer, use a Full-face Class P3 (Particulate) respirator where an inhalation risk exists. Apply artificial respiration if not breathing.

Skin: If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. Continue flushing with water until advised to stop by a Poisons Information Centre or a doctor.

Ingestion: For advice, contact a Poison Information Centre on 13 11 26 (Australia Wide) or a doctor (at once).

First aid facilities: Eye wash facilities and safety shower should be available.

4.2 Most important symptoms and effects, both acute and delayed
No information provided.

4.3 Immediate medical attention and special treatment needed
Treat symptomatically.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Use an extinguishing agent suitable for the surrounding fire.

5.2 Special hazards arising from the substance or mixture
Non flammable. May evolve toxic hexavalent chromium oxides when heated to decomposition. Oxidising agent - supports combustion. May evolve carbon oxides, nitrogen oxides and fluorine when heated to decomposition.

5.3 Advice for firefighters
Evacuate area and contact emergency services. Toxic gases may be evolved in a fire situation. Remain upwind and notify those downwind of hazard. Wear full protective equipment including Self Contained Breathing Apparatus (SCBA) when combating fire. Use waterfog to cool intact containers and nearby storage areas.

5.4 Hazchem code
1W

   1W  Risk of violent reaction or explosion. Wear liquid-tight chemical protective clothing and breathing apparatus. Contain spill and run-off.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear Personal Protective Equipment (PPE) as detailed in section 8 of the SDS. Clear area of all unprotected personnel. Ventilate area where possible. Contact emergency services where appropriate.

6.2 Environmental precautions
Prevent product from entering drains and waterways.

6.3 Methods of cleaning up
Contain spillage, then cover / absorb spill with non-combustible absorbent material (vermiculite, sand, or similar), collect and place in suitable containers for disposal.

6.4 Reference to other sections
See Sections 8 and 13 for exposure controls and disposal.
Product name  
BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Before use carefully read the product label. Use of safe work practices are recommended to avoid eye or skin contact and inhalation. Observe good personal hygiene, including washing hands before eating. Prohibit eating, drinking and smoking in contaminated areas.

7.2 Conditions for safe storage, including any incompatibilities
Store in a cool, dry, well ventilated area, removed from incompatible substances and foodstuffs. Contamination with incompatibles may cause fire or explosion. Ensure packages are adequately labelled, protected from physical damage and sealed when not in use.

7.3 Specific end use(s)
No information provided.

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

8.1 Control parameters

<table>
<thead>
<tr>
<th>Substance</th>
<th>Reference</th>
<th>TWA</th>
<th>STEL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ppm mg/m³</td>
<td>ppm mg/m³</td>
</tr>
<tr>
<td>Chromium (VI) Compounds (as Cr), water insoluble</td>
<td>SWA (AUS)</td>
<td>-- 0.05</td>
<td>-- --</td>
</tr>
<tr>
<td>Fluorides (as F)</td>
<td>SWA (AUS)</td>
<td>-- 2.5</td>
<td>-- --</td>
</tr>
<tr>
<td>Fluorides, as F</td>
<td>SWA (AUS)</td>
<td>-- 2.5</td>
<td>-- --</td>
</tr>
</tbody>
</table>

Biological limits

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Reference</th>
<th>Determinant</th>
<th>Sampling time</th>
<th>BEI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHROMIUM TRIOXIDE</td>
<td>ACGIH BEI</td>
<td>Total chromium in urine</td>
<td>End of shift at end of workweek</td>
<td>25 µg/L</td>
</tr>
<tr>
<td>SODIUM FLUORIDE</td>
<td>ACGIH BEI</td>
<td>Fluoride in urine</td>
<td>Increase during shift</td>
<td>10 µg/L</td>
</tr>
<tr>
<td></td>
<td>ACGIH BEI</td>
<td>Fluoride in urine</td>
<td>Prior to shift</td>
<td>2 mg/L</td>
</tr>
<tr>
<td></td>
<td>ACGIH BEI</td>
<td>Fluoride in urine</td>
<td>End of shift</td>
<td>3 mg/L</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Engineering Controls  Avoid inhalation. In a laboratory situation use under a fume cupboard or other localised extraction ventilation equipment. Maintain dust levels below the recommended exposure standard.

PPE

- **Eye/Face**  Wear a faceshield and dust-proof goggles.
- **Hand**  Wear rubber or butyl gloves.
- **Body**  Wear coveralls.
- **Respiratory**  Where an inhalation risk exists, wear an Air-line respirator or a Full-face Class P3 (Particulate) respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>ORANGE POWDER</td>
</tr>
<tr>
<td>Odour</td>
<td>MILD ODOUR</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>NOT AVAILABLE</td>
</tr>
<tr>
<td>pH</td>
<td>1.3 to 1.6 (1% solution)</td>
</tr>
</tbody>
</table>
Product name: BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

- Melting Point: NOT AVAILABLE
- Boiling Point: NOT AVAILABLE
- Flash Point: NOT RELEVANT
- Evaporation Rate: NOT AVAILABLE
- Flammability: NON FLAMMABLE
- Upper Explosion Limit: NOT RELEVANT
- Lower Explosion Limit: NOT RELEVANT
- Vapour Pressure: NOT AVAILABLE
- Vapour Density: NOT AVAILABLE
- Solubility (water): SOLUBLE
- Partition Coefficient: NOT AVAILABLE
- Autoignition Temperature: NOT AVAILABLE
- Decomposition Temperature: NOT AVAILABLE
- Viscosity: NOT AVAILABLE
- Explosive Properties: NOT AVAILABLE
- Oxidising Properties: OXIDISING SOLID
- Specific Gravity: NOT AVAILABLE

9.2 Other information
No information provided.

10. STABILITY AND REACTIVITY

10.1 Reactivity
Carefully review all information in sections 10.2 to 10.6.

10.2 Chemical stability
Stable under recommended conditions of storage.

10.3 Possibility of hazardous reactions
Polymerization is not expected to occur.

10.4 Conditions to avoid
Avoid heat, sparks, open flames and other ignition sources.

10.5 Incompatible materials
Oxidising agent. Incompatible with combustible materials, reducing agents (e.g. sulphites), acids (e.g. nitric acid), alkalis (e.g. sodium hydroxide), metals, heat and ignition sources.

10.6 Hazardous decomposition products
May evolve toxic hexavalent chromium oxides when heated to decomposition. May evolve carbon oxides, nitrogen oxides and fluorine when heated to decomposition.

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects
Health Hazard Summary
No information provided.
BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

No information provided.
No information provided.
No information provided.

CHROMIUM TRIOXIDE (1333-82-0)
- LD50 (Ingestion): 80 mg/kg (rat)
- LD50 (Intraperitoneal): 14 mg/kg (mouse)
- LD50 (Intravenous): 9260 ug/kg (rat)
- LDLo (Skin): 55 mg/kg (rat)
- LDLo (Subcutaneous): 20 mg/kg (mouse)
- TCLo (Inhalation): 110 ug/m³ (human)
- TDLo (Intravenous): 5 mg/kg (hamster)
- TDLo (Subcutaneous): 20 mg/kg (mouse)

TRIPOTASSIUM HEXACYANOFERRATE (13746-66-2)
- LD50 (Ingestion): 2970 mg/kg (mouse)
- LDLo (Ingestion): 1600 mg/kg (rat)
- TCLo (Inhalation): 510 ug/m³/24H/26W (rat)

POTASSIUM FLUOROZIRCONATE (16923-95-8)
- LD50 (Ingestion): 98 mg/kg (mouse)

SODIUM FLUORIDE (7681-49-4)
- LD50 (Ingestion): 52 mg/kg (rat)
- LD50 (Subcutaneous): 115 ug/kg (mouse)
- LDLo (Ingestion): 71 mg/kg (human)
- LDLo (Subcutaneous): 100 mg/kg (guinea pig)
- TDLo (Ingestion): 214 ug/kg (human)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

12.2 Persistence and degradability
No information provided.

12.3 Bioaccumulative potential
No information provided.

12.4 Mobility in soil
No information provided.

12.5 Results of PBT and vPvB assessment
No information provided.

12.6 Other adverse effects
No information provided.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Waste disposal
Wearing personal protective equipment, cover with a WEAK reducing agent (e.g. sodium bisulphite, thiosulphate, or ferrous salt; but NOT sulphur, carbon or strong reducing agent). Mix well and spray with water. Add 3M sulphuric acid if sulphite or ferrous salt is used. Add to container of water and neutralise with soda ash. Collect and dispose of to an approved landfill site. Contact the manufacturer/supplier for additional information (if required).

Legislation
Dispose of in accordance with relevant local legislation.

14. TRANSPORT INFORMATION

CLASSIFIED AS A DANGEROUS GOOD BY THE CRITERIA OF THE ADG CODE
Product name

BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

14.1 UN number
1463

14.2 UN proper shipping name
CHROMIUM TRIOXIDE, ANHYDROUS

14.3 Transport hazard classes
DG division
Sea Transport (IMDG/IMO)
Air Transport (IATA/ICAO)

<table>
<thead>
<tr>
<th>Land Transport (ADG)</th>
<th>Sea Transport (IMDG/IMO)</th>
<th>Air Transport (IATA/ICAO)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>5.1</td>
<td>5.1</td>
</tr>
</tbody>
</table>

14.4 Packing group

<table>
<thead>
<tr>
<th>DG division</th>
<th>Subsidiary risk(s)</th>
<th>Packing group</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1</td>
<td>6.1 / 8</td>
<td>II</td>
</tr>
<tr>
<td>5.1</td>
<td>6.1 / 8</td>
<td>II</td>
</tr>
<tr>
<td>5.1</td>
<td>6.1 / 8</td>
<td>II</td>
</tr>
</tbody>
</table>

14.5 Environmental hazards

Marine Pollutant

14.6 Special precautions for user

Hazchem Code
1W

EMS
F-A, S-Q

15. REGULATORY INFORMATION

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

Poison schedule
Classified as a Schedule 6 Poison using the criteria in the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

Classifications
C - Corrosive
Carc. - Carcinogen
Muta. - Mutagen
N - Dangerous for the environment
O - Oxidising
Repr. - Reproductive toxin
T - Toxic
T+ - Very toxic
Xi - Irritant

Risk phrases
R9: Explosive when mixed with combustible material.
R24/25: Toxic in contact with skin and if swallowed.
R26: Very toxic by inhalation.
R35: Causes severe burns.
R42/43: May cause sensitisation by inhalation and skin contact.
R45: May cause cancer.
R46: May cause heritable genetic damage.
R48/23: Toxic: danger of serious damage to health by prolonged exposure through inhalation.
R50/53: Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R62: Possible risk of impaired fertility.

Safety phrases
S45: In case of accident or if you feel unwell seek medical advice immediately (show the label where possible).
S53: Avoid exposure - obtain special instructions before use.
S60: This material and its container must be disposed of as hazardous waste.
S61: Avoid release to the environment. Refer to special instructions/safety data sheets.
**Product name**

**BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S**

### WHS regulatory information

<table>
<thead>
<tr>
<th>Ingredient name</th>
<th>CAS number</th>
<th>Regulation</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHROMIUM TRIOXIDE</td>
<td>1333-82-0</td>
<td>Restricted Hazardous Chemicals</td>
<td>Chromium &amp; its compounds. For abrasive blasting &gt;0.5% (except as specified for wet blasting).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Schedule 14 - Health Monitoring</td>
<td>Chromium (inorganic)</td>
</tr>
</tbody>
</table>

### Inventory listing(s)

AUSTRALIA: AICS (Australian Inventory of Chemical Substances)

All components are listed on AICS, or are exempt.

### 15.2 Chemical safety assessment

No information provided.

### 16. OTHER INFORMATION

#### Additional information

**HEALTH EFFECTS FROM EXPOSURE:**

It should be noted that the effects from exposure to this product will depend on several factors including:

- frequency and duration of use;
- quantity used;
- effectiveness of control measures;
- protective equipment used and method of application.

Given that it is impractical to prepare a ChemAlert report which would encompass all possible scenarios, it is anticipated that users will assess the risks and apply control methods where appropriate.

**PERSONAL PROTECTIVE EQUIPMENT GUIDELINES:**

The recommendation for protective equipment contained within this report is provided as a guide only. Factors such as method of application, working environment, quantity used, product concentration and the availability of engineering controls should be considered before final selection of personal protective equipment is made.

#### Abbreviations

- **ACGIH**: American Conference of Governmental Industrial Hygienists
- **CAS #**: Chemical Abstract Service number - used to uniquely identify chemical compounds
- **CNS**: Central Nervous System
- **EC No.**: EC No - European Community Number
- **EMS**: Emergency Schedules (Emergency Procedures for Ships Carrying Dangerous Goods)
- **GHS**: Globally Harmonized System
- **GTEPG**: Group Text Emergency Procedure Guide
- **IARC**: International Agency for Research on Cancer
- **LC50**: Lethal Concentration, 50% / Median Lethal Concentration
- **LD50**: Lethal Dose, 50% / Median Lethal Dose
- **mg/m³**: Milligrams per Cubic Metre
- **OEL**: Occupational Exposure Limit
- **pH**: relates to hydrogen ion concentration using a scale of 0 (high acidic) to 14 (highly alkaline)
- **ppm**: Parts Per Million
- **STEL**: Short-Term Exposure Limit
- **STOT-RE**: Specific target organ toxicity (repeated exposure)
- **STOT-SE**: Specific target organ toxicity (single exposure)
- **SUSMP**: Standard for the Uniform Scheduling of Medicines and Poisons
- **SWA**: Safe Work Australia
- **TLV**: Threshold Limit Value
- **TWA**: Time Weighted Average

#### Report Status

This ChemAlert report has been independently compiled by RMT’s scientific department utilising the original Safety Data Sheet ("SDS") for the product provided to RMT by the manufacturer. The information is based on the latest chemical and toxicological research and is believed to represent the current state of knowledge as to the appropriate safety and handling precautions for the product at the time of issue. It is an independent collation by RMT of information obtained from the original SDS for this product. Its content has not been

This report was compiled based on the SDS dated 09 May 2016

Reviewed: 17 Jun 2016

Printed: 20 Oct 2016
Product name

BONDERITE M-CR 1200S AERO KNOWN AS ALODINE 1200S

authorised or verified by the manufacturer / distributor of the chemical to which it relates.

This ChemAlert report does not constitute the manufacturer's original SDS and is not intended to be a replacement for same. It is provided to subscribers of ChemAlert as a reference tool only, is not all-inclusive and does not represent any guarantee as to the properties of the product. Further clarification regarding any aspect of the product should be obtained directly from the manufacturer.

While RMT has taken all due care to include accurate and up-to-date information in this ChemAlert report, it does not provide any warranty as to accuracy or completeness. As far as lawfully possible, RMT accepts no liability for any loss, injury or damage (including consequential loss) which may be suffered or incurred by any person as a consequence of their reliance on the information contained in this ChemAlert report.

Prepared By
Risk Management Technologies
5 Ventnor Ave, West Perth
Western Australia 6005
Phone: +61 8 9322 1711
Fax: +61 8 9322 1794
Email: info@rmt.com.au
Web: www.rmt.com.au

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Date Printed: 20 Oct 2016
Based on SDS dated: 09 May 2016

End of Report