Revision Number: 006.0

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1. IDENTIFICATION

Product name: **BONDERITE M-CR 600 AERO known as ALODINE 600**

IDH number: 594038

Product type/ Recommended use: Chromating Products for Metals

Restriction of Use: None identified

Region: United States

Company address:
Henkel Corporation
One Henkel Way
Rocky Hill, Connecticut 06067

Contact information:
Telephone: +1 (860) 571-5100
MEDICAL EMERGENCY Phone: Poison Control Center
1-877-671-4608 (toll free) or 1-303-592-1711
TRANSPORT EMERGENCY Phone: CHEMTREC
1-800-424-9300 (toll free) or 1-703-527-3887
Internet: www.henkelna.com

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER:

H272 - MAY INTENSIFY FIRE; OXIDIZER.
H301 - TOXIC IF SWALLOWED.
H310+H330 - FATAL IN CONTACT WITH SKIN OR IF INHALED.
H314 - CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.
H317 - MAY CAUSE AN ALLERGIC SKIN REACTION.
H334 - MAY CAUSE ALLERGY OR ASTHMA SYMPTOMS OR BREATHING DIFFICULTIES IF INHALED.
H335 - MAY CAUSE RESPIRATORY IRRITATION.
H340 - MAY CAUSE GENETIC DEFECTS.
H350 - MAY CAUSE CANCER.
H360 - MAY DAMAGE FERTILITY OR THE UNBORN CHILD.
H372 - CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE.

HAZARD CLASS	HAZARD CATEGORY
OXIDIZING SOLID	2
ACUTE TOXICITY ORAL	3
ACUTE TOXICITY INHALATION	2
ACUTE TOXICITY DERMAL	2
SKIN CORROSION	1
SERIOUS EYE DAMAGE	1
RESPIRATORY SENSITIZATION	1
SKIN SENSITIZATION	1
GERM CELL MUTAGENICITY	1B
CARCINOGENICITY	1A
REPRODUCTIVE TOXICITY	1B
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE	3
SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE	1

PICTOGRAM(S)

Precautionary Statements

Prevention: P201 - Obtain special instructions before use.

	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. P19 - Keep away from clothing and other combustible materials. P260 - Do not breathe dust. P262 - Do not get in eyes, on skin, or on clothing. P264 - Wash affected area 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. P280 - Wear protective gloves, clothing, eye and face protection. P284 - [In case of inadequate ventilation] wear respiratory protection.
Response:	P301+P310+P330 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. P304+P340+P310 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or physician. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 - IF exposed or concerned: Get medical attention. P333+P313 - If skin irritation or rash occurs: Get medical attention. P342+P311 - If experiencing respiratory symptoms: Call a poison center or physician. P361+P364 - Take off immediately all contaminated clothing and wash it before reuse. P370+P378 - In case of fire: Use foam, dry chemical or carbon dioxide to extinguish.
Storage:	P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up.
Disposal:	P501 - Dispose of contents and/or container according to Federal, State/Provincial and local governmental regulations.

Other hazards Not available.

Classification complies with OSHA Hazard Communication Standard (29 CFR 1910.1200) and is consistent with the provisions of the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Component(s)	CAS Number	Weight %*
Sodium borofluoride	13755-29-8	30 - 60
Chromium trioxide	1333-82-0	30 - 60
Dipotassium hexafluorozirconate	16923-95-8	10 - 30

* Exact percentages may vary or are trade secret. Concentration range is provided to assist users in providing appropriate protections.

4. FIRST AID MEASURES

First Aid Measures by likely routes of exposure

Inhalation:	Move to fresh air. If symptoms develop and persist, get medical attention. Delayed effects possible after inhalation. Administer oxygen or artificial respiration as needed. Do not use mouth-to-mouth method if victim ingested or inhaled the substance. Trained personnel should administer 2.5% calcium gluconate through a nebulizer for 20 minutes.
Skin contact:	Remove contaminated clothing and footwear while rinsing the affected area with large amounts of running water for at least 15 minutes. GET IMMEDIATE MEDICAL ATTENTION. If iced solution of 0.13% aqueous Benzalkonium Chloride (Zephiran) or 2.5% calcium gluconate gel is available, rinsing may be limited to 5 minutes, with the soak solution or gel applied as soon as the rinsing is stopped. Gloves should be worn when applying the gel to prevent transfer of HF and secondary burns. If using calcium gluconate gel, it should be continuously re-applied and massaged into the affected area until pain has been relieved for at least 30 minutes. If Benzalkonium Chloride (Zephiran) or calcium gluconate gel is not available, rinsing must continue until medical treatment is provided. Topical 10 % EDTA ointment can be used to treat chromate scabs and skin ulcers. A 10 % ascorbic acid solution may speed healing if applied promptly. Larger exposures may need additional treatment. Launder contaminated clothing before reuse. Discard any shoes or clothing items that cannot be decontaminated.
Eye contact:	Immediately flush affected eye with large amounts of gently flowing water or 0.9% sterile saline solution for at least 15 minutes. Hold eyelid wide open. Get immediate medical attention. Eye flushing should continue during transportation to a doctor.
Ingestion:	Get immediate medical attention. Do not induce vomiting. Attempt immediate administration of a fluoride binding substance: milk, chewable calcium carbonate tablets or 4-8 ounces (120-240 ml) of milk of magnesia or a liquid antacid. Avoid large amounts of liquid as it may induce vomiting. If individual is conscious, wash out mouth with water. Provide a glass of water to dilute the material in the stomach.
Most important symptoms and effects (acute and delayed):	The most important known symptoms and effects, both acute and delayed, are described in Section 11: Toxicological Information.
Indication of any immediate medical attention / special treatment needed:	Ocular exposure to corrosive fluoride compounds has been treated with isotonic sodium chloride or magnesium chloride. Dermal exposure to corrosive fluoride compounds has been treated with calcium gluconate or calcium carbonate gel applied topically to the affected areas to relieve pain at the site of exposure. Treatment of hypocalcemia associated with corrosive fluoride compounds exposure may be corrected by intravenous calcium gluconate or calcium chloride. Treatment of hypomagnesemia may be corrected by intravenous magnesium sulfate.

5. FIRE FIGHTING MEASURES

Extinguishing media:	Water spray (fog), foam, dry chemical or carbon dioxide.
Improper extinguishing agents:	Not available.
Special firefighting procedures:	Wear full protective clothing. Wear self-contained breathing apparatus.
Unusual fire or explosion hazards:	Oxidizing agent, may cause spontaneous ignition of combustible materials. May liberate large quantities of dense, foul-smelling smoke which may contain unidentified toxic gasses.

Hazardous combustion products: Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. Hydrogen fluoride. Chromium oxide.

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Wear appropriate personal protective equipment.

Clean-up methods: Spills should be cleaned immediately to prevent dispersion of airborne dusts. Follow all local, state, federal and provincial regulations for disposal.

7. HANDLING AND STORAGE

Handling: Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Avoid breathing dust. Use only with adequate ventilation. Launder work clothes frequently. Do not store or consume food, drink, or tobacco products in areas where they may become contaminated with this material. Do not take internally. For industrial use only.

Storage: Store in a cool, dry, well-ventilated area.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous Component(s)	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Sodium borofluoride	2.5 mg/m3 TWA (as F)	2.5 mg/m3 PEL (as F) 2.5 mg/m3 TWA Dust.	None	None
Chromium trioxide	None	0.0025 mg/m3 OSHA_ACT 0.005 mg/m3 TWA	None	None
Dipotassium hexafluorozirconate	2.5 mg/m3 TWA (as F) 5 mg/m3 TWA (as Zr) 10 mg/m3 STEL (as Zr)	5 mg/m3 PEL (as Zr) 2.5 mg/m3 PEL (as F) 2.5 mg/m3 TWA Dust.	None	None

Engineering controls: Ventilation should effectively remove and prevent buildup of any dust generated from the handling of this product.

Respiratory protection: If ventilation is not sufficient to effectively prevent buildup of dust, appropriate NIOSH/MSHA respiratory protection must be provided.

Eye/face protection: Wear chemical goggles and face shield.

Skin protection: Use chemical resistant, impervious gloves and clothing to prevent skin contact. Gloves should be tested to determine suitability for prolonged contact. Use of impervious boots is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Solid
Color: Mahogony
Odor: Neutral
Odor threshold: Not available.
pH: 1.3 - 1.7 (2% solution)
pH: < 2.0
Vapor pressure: Not applicable
Boiling point/range: Not applicable> 98 °C (> 208.4 °F)

Melting point/ range:	Not determined
Density/Relative density:	Not applicable
Relative vapor density:	Not applicable, Product is a solid
Flash point:	Not applicable
Flammable/Explosive limits - lower:	Not available.
Flammable/Explosive limits - upper:	Not available.
Autoignition temperature:	Not applicable
Flammability:	The product is not flammable.
Evaporation rate:	Not applicable
Solubility:	Soluble Water
Solubility:	Complete Water
Partition coefficient n-octanol/water (logarithmic value):	Not available.
VOC content:	Not applicable
Dynamic viscosity:	Not available.
Kinematic viscosity:	Not available.
Particle characteristics:	Not available.
Decomposition temperature:	Not available.

10. STABILITY AND REACTIVITY

Stability:	Stable at normal conditions.
Hazardous reactions:	None under normal processing.
Hazardous decomposition products:	Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons. May liberate hydrogen fluoride. Oxides of boron.
Incompatible materials:	This product may react with strong reducing agents. This product may react with strong acids, bases and oxidizing agents. This material will react with glass, concrete, certain metals, silica containing materials, rubber, leather, and many organics. Keep away from organic and combustible materials.
Reactivity:	Not available.
Conditions to avoid:	This product is an OXIDIZING AGENT - avoid contact with organic material.

11. TOXICOLOGICAL INFORMATION

Likely routes of exposure: Skin, Inhalation, Eyes, Ingestion

Potential Health Effects/Symptoms

Inhalation: Contains fluorides. Exposure to fluorides over years may cause fluorosis. May be harmful or fatal if inhaled. Nasal itch and soreness, perforation of the nasal septum, dental erosion, and chronic asthmatic bronchitis may result from repeated exposure. May cause respiratory tract irritation. May cause allergic respiratory reaction. Causes respiratory tract irritation.

Skin contact: This product is severely irritating to the skin and may cause burns. Liquid or vapor can cause fluoride-type irritation or burns which may not be immediately painful or visible. Hydrofluoric acid will penetrate the skin and attack underlying tissue and bone. Large burns (over 25 square inches) may also cause hypocalcemia and other systemic effects which may be fatal. A component in this product may be harmful or fatal if absorbed through the skin, especially if skin is damaged. Contact with broken skin may lead to formation of firmly marginated "chrome sores". May cause allergic skin reaction. Causes skin burns.

Eye contact: This product is severely irritating to the eyes and may cause irreversible damage including burns and blindness. Causes serious eye damage.

Ingestion: Contains fluorides. Exposure to fluorides over years may cause fluorosis. Harmful or fatal if swallowed. May cause burns of the mouth, throat and stomach. May also cause gastrointestinal disturbances such as nausea, vomiting, abdominal pain, and diarrhea.

Hazardous Component(s)	LD50s and LC50s
Sodium borofluoride	None
Chromium trioxide	Oral LD50 (Rat) = 25 mg/kg Dermal LD50 (Rabbit) = 30 mg/kg Inhalation LC50 (Rat, 4 h) = 167 mg/m3 Inhalation LC50 (Rat, 4 h) = 217 mg/m3 Inhalation LC50 (Rat, 4 h) = 263 mg/m3
Dipotassium hexafluorozirconate	Oral LD50 (Mouse) = 98 mg/kg

Hazardous Component(s)	Immediate Health Effects	Delayed Health Effects	Chronic Health Effects
Sodium borofluoride	Irritant		Cardiac Central nervous system Developmental Gastrointestinal Kidney Metabolic Reproductive
Chromium trioxide	Corrosive Irritant	Allergen	Blood Central nervous system Carcinogen Developmental Eyes Gastrointestinal Kidney Liver Mutagen Reproductive Respiratory
Dipotassium hexafluorozirconate	Corrosive Irritant	Allergen	Blood Cardiac Central nervous system Gastrointestinal tract Kidney Lung Metabolic Muscle Teeth

Hazardous Component(s)	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen (Specifically Regulated)
Sodium borofluoride	No	No	No
Chromium trioxide	Known To Be Human Carcinogen.	Group 1	Yes
Dipotassium hexafluorozirconate	No	No	No

12. ECOLOGICAL INFORMATION

Ecological information: Not available.

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal: Dispose of according to Federal, State and local governmental regulations.

14. TRANSPORT INFORMATION

The transport information provided in this section only applies to the material/formulation itself, and is not specific to any packaging.

U.S. Department of Transportation Ground (49 CFR)

Proper shipping name:	Chromium trioxide, anhydrous mixture
Hazard class or division:	5.1 (6.1, 8)
Identification number:	UN 1463
Packing group:	II
DOT Hazardous Substance(s):	Chromic acid, Zirconium potassium fluoride

International Air Transportation (ICAO/IATA)

Proper shipping name:	Chromium trioxide, anhydrous mixture
Hazard class or division:	5.1 (6.1, 8)
Identification number:	UN 1463
Packing group:	II

Water Transportation (IMO/IMDG)

Proper shipping name:	CHROMIUM TRIOXIDE, ANHYDROUS mixture
Hazard class or division:	5.1 (6.1, 8)
Identification number:	UN 1463
Packing group:	II

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status:	All components are listed as active or are exempt from listing on the Toxic Substances Control Act (TSCA) inventory.
TSCA 12 (b) Export Notification:	Chromium trioxide (CAS# 1333-82-0).
CERCLA/SARA Section 302 EHS:	None above reporting de minimis.
CERCLA/SARA Section 311/312:	Please refer to the GHS classification in Section 2
CERCLA/SARA Section 313:	This product contains the following toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (40 CFR 372). Chromium trioxide (CAS# 1333-82-0).
CERCLA Reportable quantity:	Chromium trioxide (CAS# 1333-82-0) 10 lbs. (4.54 kg) Dipotassium hexafluorozirconate (CAS# 16923-95-8) 1,000 lbs. (454 kg)
California Proposition 65:	This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Canada Regulatory Information

CEPA DSL/NDSL Status:	All components are listed on or are exempt from listing on the Canadian Domestic Substances List.

16. OTHER INFORMATION

This safety data sheet contains changes from the previous version in sections: New Safety Data Sheet format.

Prepared by: Product Safety and Regulatory Affairs

Issue date: 09/19/2025

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