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### 1. PRODUCT AND COMPANY IDENTIFICATION

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TRADE NAME: ALUMINUM CHROMIUM ALLOY  
CHEMICAL FORMULA: Al-Cr

MANUFACTURER/SUPPLIER: Stanford Advanced Materials  
COMPANY'S STREET: Address : 23661 Birtcher Dr.,  
Lake Forest, CA 92630 U.S.A.

EMERGENCY CHEMTREC #: (949)407-8904  
(This telephone number is available  
24hours per day, 7 days per week.)

RECOMMENDED USE: SCIENTIFIC RESEARCH AND DEVELOPMENT

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### 2. HAZARDS IDENTIFICATION

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SIGNAL WORD: WARNING



HAZARD SYMBOLS: HIGHLY FLAMMABLE AS POWDER  
SUSPECTED CARCINOGEN

HMIS HEALTH RATINGS (0-4):

HEALTH: 1  
FLAMMABILITY: 0 (3 IF POWDER)  
REACTIVITY: 1 (2 IF POWDER)

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### 3. COMPOSITION

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CHEMICAL FAMILY: METAL ALLOY  
ADDITIONAL NAMES: ALUMINUM CHROMIUM  
ALUMINUM (Al):  
PERCENTAGE: 0-100 wt%  
CAS #: 7429-90-5  
CHROMIUM (Cr):  
PERCENTAGE: 0-100 wt%  
CAS #: 7440-47-3

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### 4. FIRST AID PROCEDURES

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IMPORTANT SYMPTOMS: NONE  
SPECIAL TREATMENT: NONE  
INHALATION: REMOVE VICTIM TO FRESH AIR, KEEP WARM AND QUIET,  
GIVE OXYGEN IF BREATHING IS DIFFICULT AND SEEK  
MEDICAL ATTENTION IF SYMPTOMS PERSIST.  
INGESTION: GIVE 1-2 GLASSES OF MILK OR WATER AND INDUCE  
VOMITING, SEEK MEDICAL ATTENTION IF SYMPTOMS  
PERSIST. NEVER INDUCE VOMITING OR GIVE ANYTHING BY  
MOUTH TO AN UNCONSCIOUS PERSON.

SKIN: REMOVE CONTAMINATED CLOTHING, BRUSH MATERIAL OFF SKIN, WASH AFFECTED AREA WITH MILD SOAP AND WATER, AND SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.

EYES: FLUSH EYES WITH LUKEWARM WATER, LIFTING UPPER AND LOWER EYELIDS, FOR AT LEAST 20 MINUTES. SEEK MEDICAL ATTENTION IF SYMPTOMS PERSIST.

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#### 5. FIRE AND EXPLOSION HAZARDS DATA

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FLAMMABILITY: NON-FLAMMABLE, EXCEPT AS POWDER

FLASH POINT: N/A

AUTOIGNITION TEMPERATURE: N/A

EXTINGUISHING MEDIA: USE DRY EXTINGUISHING AGENT SUCH AS SAND. DO NOT USE WATER.

SPEC. FIRE FIGHTING PROCEDURE: USE FULL-FACE, SELF-CONTAINED BREATHING APPARATUS WITH FULL PROTECTIVE CLOTHING TO PREVENT CONTACT WITH SKIN AND EYES. FUMES FROM FIRE IS HAZARDOUS. ISOLATE RUNOFF TO PREVENT ENVIRONMENTAL POLLUTION.

UNUSUAL FIRE & EXPLOSION HAZ: WHEN HEATED TO DECOMPOSITION, MAY EMIT TOXIC METAL OXIDE FUMES.

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#### 6. ACCIDENTAL RELEASE MEASURES

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IF MATERIAL IS RELEASED/ SPILLED: WEAR APPROPRIATE RESPIRATORY AND PROTECTIVE EQUIPMENT SPECIFIED IN SPECIAL PROTECTION INFORMATION. ISOLATE SPILL AREA AND PROVIDE VENTILATION. VACUUM UP SPILL USING A HIGH EFFICIENCY PARTICULATE ABSOLUTE (HEPA) AIR FILTER AND PLACE IN A CLOSED CONTAINER FOR DISPOSAL. TAKE CARE NOT TO RAISE DUST.

ENVIRONMENTAL PRECAUTIONS: N/A

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#### 7. HANDLING AND STORAGE

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HANDLING CONDITIONS: WASH THOROUGHLY AFTER HANDLING.

HMS PROTECTIVE EQUIPMENT: GLASSES, GLOVES, APRON, DUST RESPIRATOR

STORAGE CONDITIONS: STORE IN A COOL DRY PLACE IN A TIGHTLY SEALED CONTAINER.

WORK/HYGIENIC MAINTENANCE: IMPLEMENT ENGINEERING AND WORK PRACTICE CONTROLS TO REDUCE AND MAINTAIN CONCENTRATION OF EXPOSURE AT LOW LEVELS. USE GOOD HOUSEKEEPING AND SANITATION PRACTICES. DO NOT USE TOBACCO OR FOOD IN WORK AREA. WASH THOROUGHLY BEFORE EATING AND SMOKING. DO NOT BLOW DUST OFF CLOTHING OR SKIN WITH COMPRESSED AIR.

VENTILATION: TO MAINTAIN CONCENTRATION AT OR BELOW TLV.

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#### 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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OSHA PEL: 1 mg/m<sup>3</sup> (AS CHROMIUM METAL)

ACGIH TLV: 0.5 mg/m<sup>3</sup> (AS CHROMIUM METAL)

LD50/LC50: ORL-RAT LDLO: 560 mg/kg

SPECIAL EQUIPMENT: NONE

RESPIRATORY PROTECTION: NIOSH APPROVED DUST/MIST RESPIRATOR

PROTECTIVE GLOVES: RUBBER GLOVES

EYE PROTECTION: SAFETY GLASSES

OTHER: PROTECTIVE GEAR SUITABLE TO PREVENT CONTAMINATION.

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## 9. PHYSICAL AND CHEMICAL CHARACTERISTICS

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COLOR	SILVERY GREY
FORM:	POWDER, PIECES, PELLETS, GRANULES, SPUTTERING TARGET
ODOR:	ODORLESS
SOLUBILITY IN H <sub>2</sub> O:	INSOLUBLE
BOILING POINT:	N/A
MELTING POINT:	660 °C AS PURE ALUMINUM, 1857 °C AS PURE CHROMIUM
SPECIFIC GRAVITY (H <sub>2</sub> O=1):	N/A
MOLECULAR WEIGHT:	N/A

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## 10. REACTIVITY

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STABILITY:	STABLE
INCOMPATIBILITY:	POWDER INCOMPATIBLE WITH AIR AND WATER, BASES, HALOCARBONS. OTHERWISE, AVOID STRONG OXIDIZING AGENTS AND ACIDS.
HAZ. DECOMPOSITION PRODUCTS:	METAL OXIDE FUME
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR

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## 11. TOXICOLOGICAL INFORMATION

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EMERGENCY OVERVIEW:	TO THE BEST OF OUR KNOWLEDGE THE CHEMICAL, PHYSICAL & TOXICOLOGICAL PROPERTIES OF THIS MATERIAL HAVE NOT BEEN THOROUGHLY INVESTIGATED AND RECORDED.
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### POTENTIAL HEALTH EFFECTS:

EYE:	MAY CAUSE ABRASIVE IRRITATION.
SKIN:	MAY CAUSE ABRASIVE IRRITATION
INGESTION:	MAY CAUSE GASTROINTESTINAL DISORDERS.
INHALATION:	ALUMINUM IN AEROSOLS HAS BEEN IMPLICATED IN ALZHEIMER'S DISEASE.

ROUTES OF ENTRY:	INHALATION, SKIN, EYES, AND INGESTION.
TARGET ORGANS:	NONE
SIGNS & SYMPTOMS OF EXPOSURE:	PRE-EXISTING RESPIRATORY DISORDERS, IMPAIRED LIVER OR KIDNEY FUNCTION.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:	N/A
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### CARCINOGEN:

NTP:	N/A
IARC MONOGRAPHS:	NO
OSHA REGULATED:	NO
RTECS:	YES

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## 12. ECOLOGICAL INFORMATION

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ECOLOGICAL DATA IS NOT AVAILABLE.

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## 13. DISPOSAL CONSIDERATIONS

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DISPOSE OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.

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## 14. TRANSPORTATION DATA

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HAZARDOUS:	HAZARDOUS ONLY AS POWDER
UN NUMBER:	UN3208

UN PROPER SHIPPING NAME:

METALLIC SUBSTANCE, WATER REACTIVE, N.O.S.  
(ALUMINUM CHROMIUM ALLOY)



HAZARD CLASS: 4.3  
PACKING GROUP: II  
ROAD TRAN. ADR/RID CLASS: 4.3 (W2) SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES.  
AIR TRAN. ICAO/IATA CLASS: 4.3 SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES.  
MARITIME TRAN. IMDG CLASS: 4.3 SUBSTANCES WHICH, IN CONTACT WITH WATER, EMIT FLAMMABLE GASES.

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#### 15. REGULATORY INFORMATION

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SEC.302 (EHS): NO  
SEC.304 (RQ): N/A  
SEC.313 (SARA): YES

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#### 16. OTHER INFORMATION

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THIS SAFETY DATA SHEET SHOULD BE USED IN CONJUNCTION WITH TECHNICAL SHEETS. IT DOES NOT REPLACE THEM. THE INFORMATION GIVEN IS BASED ON OUR KNOWLEDGE OF THIS PRODUCT, AT THE TIME OF PUBLICATION. IT IS GIVEN IN GOOD FAITH. THE ATTENTION OF THE USER IS DRAWN TO THE POSSIBLE RISKS INCURRED BY USING THE PRODUCT FOR ANY OTHER PURPOSE OTHER THAN THAT FOR WHICH IT WAS INTENDED. THIS DOES NOT IN ANY WAY EXCUSE THE USER FROM KNOWING AND APPLYING ALL THE REGULATIONS GOVERNING HIS ACTIVITY. IT IS THE SOLE RESPONSIBILITY OF THE USER TO TAKE ALL PRECAUTIONS REQUIRED IN HANDLING THE PRODUCT. THE AIM OF THE MANDATORY REGULATIONS MENTIONED IS TO HELP THE USER TO FULFILL HIS OBLIGATIONS REGARDING THE USE OF HAZARDOUS PRODUCTS.

DATE MSDS PREPARED: 06/25/14  
DATE LAST REVISED: N/A