Safety Data Sheet

I. Product Identification

Manufacturer/Supplier:
QS Advanced Materials Inc
599 Thurber Dr.
Troy, MI 48085
Tel: 866-279-7170
E-mail: Sales@QSadvancedmaterials.com

Product Name: Aluminum Scandium (Al/Sc) Sputtering Targets
Formula of major composition: Al/Sc
CAS Number: 7429-90-5 / 7440-20-2

II. Hazardous Identification

Classification of the substance or mixture
Not a hazardous substance or mixture.

GHS Label elements, including precautionary statements
Not a hazardous substance or mixture.

Hazard not otherwise classified (HNOC) or not covered by GHS - none

III. Composition/information on ingredients

Specific Gravity: No data.
Solubility in H2O: Insoluble
Appearance and Odor: Silvery Solid, no odor

IV. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Move out of dangerous area.

**If inhaled**
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

**In case of skin contact**
Wash off with soap and plenty of water.

**In case of eye contact**
Flush eyes with water as a precaution.

**If swallowed**
Never give anything by mouth to an unconscious person. Rinse mouth with water.

### 4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

### 4.3 Indication of any immediate medical attention and special treatment needed
No data available

### V. FIRE AND EXPLOSION HAZARDS DATA

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<tbody>
<tr>
<td><strong>Flash Point:</strong></td>
<td>N/A</td>
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<tr>
<td><strong>Flammability:</strong></td>
<td>N/A</td>
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<tr>
<td><strong>Autoignition Temperature:</strong></td>
<td>N/A</td>
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<tr>
<td><strong>Flammable Limits:</strong></td>
<td></td>
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<tr>
<td>Upper</td>
<td>NA</td>
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<td>Lower</td>
<td>NA</td>
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**Extinguishing Media:**
Use suitable extinguishing media for surrounding material and type of fire.

**Special Firefighting Procedures:**
Fire fighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

**Unusual Fire & Explosion Hazards:**
NA

### VI. Accidental release measures

#### 6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapors, mist or gas. For personal protection see section VIII.

#### 6.2 Environmental precautions
No special environmental precautions required.

#### 6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.
6.4 Reference to other sections
For disposal see section XIII.

VII. Handling and storage

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Keep in a dry place.
Storage class (TRGS 510): 13: Non-Combustible Solids

7.3 Specific end use(s)
Apart from the uses as laboratory chemicals no other specific uses are stipulated

VIII. Exposure controls/personal protection

Respiratory Protection: NIOSH approved respirator.
Ventilation: Use local exhaust to limit personal exposure to levels which do not exceed the TLV. General exhaust is recommended.
Protective Gloves: Rubber gloves
Eye Protection: Safety glasses
Appropriate engineering controls: General industrial hygiene practice.

IX. Physical and chemical properties

a) Appearance Silvery Solid, no odor
b) Odor odorless
c) Odor Threshold No data available
d) pH Solid, no data available
e) Melting point N.A.
f) Initial boiling point N.A.
g) Flash point Not applicable
h) Evaporation rate None available
i) Flammability (solid, gas) The product is not flammable.
j) Upper/lower flammability or explosive limits No data available
k) Vapour pressure  No data available
l) Vapour density  No data available
m) Water solubility  Insoluble

X. Stability and reactivity

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
No decomposition in regular fire conditions.

XI. Toxicological information

11.1 Information on toxicological effects Acute toxicity
LD50 Oral - Rat - male and female - > 10,000 mg/kg
(OECD Test Guideline 401)
LC50 Inhalation - Rat - male and female - 4 h - > 2.3 mg/l
(OECD Test Guideline 403)
Dermal: No data available No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h (OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization
Draize Test - Guinea pig
Result: Does not cause skin sensitization.
- Mouse
Result: Does not cause respiratory sensitization.

Germ cell mutagenicity
No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA’s list of regulated carcinogens.

**Reproductive toxicity**
No data available

**Specific target organ toxicity - single exposure**
No data available

**Specific target organ toxicity - repeated exposure**
No data available

**Aspiration hazard**
No data available

**Additional Information**
RTECS: Not available

Cough, chest pain, Difficulty in breathing, Gastrointestinal disturbance
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

**XII: Ecological information**

12.1 Toxicity
No data available

12.2 Persistence and degradability
The methods for determining the biological degradability are not applicable to inorganic substances.

12.3 Bio accumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

**XIII: Disposal considerations**

13.1 Waste treatment methods Product
Offer surplus and non-recyclable solutions to a licensed disposal company.
Contaminated packaging
Dispose of as unused product.

XIV: Transport information

DOT (US)
Not dangerous goods
IMDG
Not dangerous goods
IATA
Not dangerous goods

XV: Regulatory information

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:
Aluminum Scandium CAS-No. 7429-90-5 / 7440-20-2 Revision Date 1994-04-01

SARA 311/312 Hazards
Chronic Health Hazard

XVI: Other information
The above information is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. QSAM shall not be held liable for any damage resulting from handling or from contact with the above product.

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