



# MATERIAL SAFETY DATA SHEET

according to EC Directive 2001/58/EC

AM92

Revision Number 3,  
January 19, 2006

## 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product code: 1095

<b>Product name</b>	AM92
<b>Synonyms</b>	Alumina mix, AM92
<b>Manufacturer, importer, supplier</b>	Almatis GmbH Olof-Palme-Strasse 37 60439 Frankfurt am Main Germany  Almatis GmbH Giulinistrasse 2 67065 Ludwigshafen Germany
<b>Emergency telephone number</b>	CHEMTREC: +1-703-527-3887 +1-800-424-9300 Almatis: 501-776-4677
<b>Use of the Substance/Preparation</b>	Refractory
<b>Additional information available from:</b>	www.almatis.com

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

CAS	Chemical Name	% Weight	EINECS - European Union*
1344-28-1	Aluminum oxide	65-100	215-691-6
12042-68-1	Calcium aluminate Ca <sub>2</sub> (AlO <sub>2</sub> )	0-35	234-931-0
12004-88-5	Aluminum calcium oxide (Al <sub>4</sub> CaO <sub>7</sub> )	0-35	234-463-7

\* EINECS - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

## 3. HAZARDS IDENTIFICATION

<b>Emergency Overview:</b>	
<ul style="list-style-type: none"> <li>Non-combustible</li> </ul>	
<b>Eye contact</b>	<ul style="list-style-type: none"> <li>Contact with eyes may cause irritation</li> </ul>
<b>Skin contact</b>	<ul style="list-style-type: none"> <li>May cause eye/skin irritation</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>May cause irritation of respiratory tract</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>Ingestion may cause irritation to mucous membranes</li> </ul>
<b>Aggravated Medical Conditions</b>	<ul style="list-style-type: none"> <li>Asthma</li> <li>Lung irritation</li> <li>Dermatitis</li> </ul>
<b>Classification</b>	Not dangerous

Canadian Hazard Symbol: Not applicable

## 4. FIRST AID MEASURES

<b>General advice</b>	<ul style="list-style-type: none"> <li>Show this safety data sheet to the doctor in attendance</li> </ul>
<b>Skin contact</b>	<ul style="list-style-type: none"> <li>Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes</li> <li>If skin irritation persists, call a physician</li> </ul>

**MATERIAL SAFETY DATA SHEET AM92**

<b>Eye contact</b>	<ul style="list-style-type: none"> <li>● Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes</li> <li>● If symptoms persist, call a physician</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>● Move to fresh air</li> <li>● If breathing is difficult, give oxygen</li> <li>● If not breathing, give artificial respiration</li> <li>● Consult a physician if necessary</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>● Clean mouth with water and afterwards drink plenty of water</li> <li>● Never give anything by mouth to an unconscious person</li> <li>● Do not induce vomiting without medical advice</li> <li>● Consult a physician</li> </ul>

**5. FIRE-FIGHTING MEASURES**

<b>Suitable extinguishing media</b>	<ul style="list-style-type: none"> <li>● The product itself does not burn</li> <li>● Use extinguishing measures that are appropriate to local circumstances and the surrounding environment</li> </ul>
<b>Special protective equipment for firefighters</b>	<ul style="list-style-type: none"> <li>● Wear self-contained breathing apparatus and protective suit</li> </ul>

**6. ACCIDENTAL RELEASE MEASURES**

<b>Personal precautions</b>	<ul style="list-style-type: none"> <li>● Wear personal protective equipment</li> <li>● Avoid dust formation</li> </ul>
<b>Environmental precautions</b>	<ul style="list-style-type: none"> <li>● No special environmental precautions required</li> </ul>
<b>Methods for cleaning up</b>	<ul style="list-style-type: none"> <li>● Take up mechanically and collect in suitable container for disposal</li> <li>● Ensure adequate ventilation</li> </ul>

**7. HANDLING AND STORAGE**

**Handling**

<b>Technical measures/Precautions</b>	<ul style="list-style-type: none"> <li>● Ensure adequate ventilation</li> </ul>
<b>Safe handling advice</b>	<ul style="list-style-type: none"> <li>● Avoid dust formation in confined areas</li> </ul>

**Storage**

<b>Technical measures/Precautions</b>	<ul style="list-style-type: none"> <li>● Keep in a dry place</li> <li>● Keep container tightly closed</li> </ul>
<b>Incompatible products</b>	<ul style="list-style-type: none"> <li>● No information available</li> </ul>
<b>Specific use(s)</b>	<ul style="list-style-type: none"> <li>● None</li> </ul>

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

**Exposure Limit Values**

CAS	Chemical Name	% Weight	OSHA*	ACGIH*	MEL*	GOEL*
1344-28-1	Aluminum oxide	65-100	15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)	10 mg/m3 TWA (particulate matter containing no asbestos and < 1% crystalline silica)	N/A	3.0 mg/m3 6.0 mg/m3(a)
12042-68-1	Calcium aluminate Ca <sub>2</sub> (AlO <sub>2</sub> )	0-35	N/A	N/A	N/A	N/A
12004-88-5	Aluminum calcium oxide (Al <sub>4</sub> CaO <sub>7</sub> )	0-35	N/A	N/A	N/A	N/A

## MATERIAL SAFETY DATA SHEET AM92

\* OSHA - Final PELs - Time Weighted Averages (TWAs)

\* ACGIH - Occupational Exposure Limits - TWAs

\* MEL - United Kingdom - Maximum Exposure Limits - (STELs)

\* GOEL - Germany - TRGS 900 - Occupational Exposure Limits – TWAs, (a) exempt facilities listed in 2.4(8) and (9)

### Personal protective equipment

<b>Respiratory protection</b>	<ul style="list-style-type: none"><li>● In case of insufficient ventilation, wear suitable respiratory equipment</li><li>● When workers are facing concentrations above the exposure limit they must use appropriate certified respirators</li></ul>
<b>Hand protection</b>	<ul style="list-style-type: none"><li>● Wear suitable protective gloves</li></ul>
<b>Eye protection</b>	<ul style="list-style-type: none"><li>● Tightly fitting safety goggles</li><li>● Safety glasses with side-shields</li></ul>
<b>Skin and body protection</b>	<ul style="list-style-type: none"><li>● No special protective equipment required</li></ul>
<b>Hygiene measures</b>	<ul style="list-style-type: none"><li>● When using, do not eat, drink or smoke</li><li>● Regular cleaning of equipment, work area and clothing</li></ul>
<b>Environmental exposure controls</b>	<ul style="list-style-type: none"><li>● No information available</li></ul>

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### General Information

<b>Form</b>	<ul style="list-style-type: none"><li>● Powder</li></ul>
<b>Colour</b>	<ul style="list-style-type: none"><li>● White</li></ul>
<b>Odour</b>	None

### Important Health Safety and Environmental Information

<b>Melting Point/Range</b>	1,700 to 2,000°C
<b>Boiling point/range</b>	Not determined
<b>Flash point</b>	Not applicable
<b>Autoignition temperature</b>	Does not ignite
<b>Risk of explosion</b>	Not applicable
<b>Density</b>	2.5-3.5 g/cm <sup>3</sup>
<b>Bulk density</b>	800-1100 kg/m <sup>3</sup>
<b>Water solubility</b>	Insoluble
<b>pH</b>	8 to 11
<b>Solubility in other solvents</b>	Insoluble
<b>Vapour density</b>	No information available.

## 10. STABILITY AND REACTIVITY

<b>Stability</b>	<ul style="list-style-type: none"><li>● Stable under normal conditions</li></ul>
<b>Conditions to avoid</b>	<ul style="list-style-type: none"><li>● No decomposition if stored and applied as directed</li></ul>
<b>Materials to avoid</b>	<ul style="list-style-type: none"><li>● No information available</li></ul>
<b>Hazardous decomposition products</b>	<ul style="list-style-type: none"><li>● Not applicable</li></ul>
<b>Polymerization</b>	<ul style="list-style-type: none"><li>● Hazardous polymerisation does not occur</li></ul>
<b>Reactions</b>	<ul style="list-style-type: none"><li>● Heating occurs when water is added</li></ul>

## 11. TOXICOLOGICAL INFORMATION

### Local effects

<b>Skin irritation</b>	May cause skin irritation and/or dermatitis.
<b>Eye irritation</b>	Contact with eyes may cause irritation.
<b>Inhalation</b>	May cause irritation of respiratory tract.

**MATERIAL SAFETY DATA SHEET AM92**

<b>Ingestion</b>	Ingestion may cause irritation to mucous membranes.
<b>Additional advice</b>	The following toxicological data shown are those obtained from tests on products of similar composition (in accordance with EC-Directive 1999/45/EC): No information available

**Long term Effects**

<b>Skin contact</b>	No information available
<b>Eye contact</b>	No information available
<b>Inhalation</b>	No information available
<b>Ingestion</b>	No information available
<b>Additional advice</b>	

**12. ECOLOGICAL INFORMATION**

<b>Additional ecological information</b>	No information available.
<b>Ecotoxicity effects</b>	<ul style="list-style-type: none"> <li>Water hazard class 1 (German Regulation): slightly hazardous for water</li> </ul>

CAS	Chemical Name	% Weight	WGK
1344-28-1	Aluminum oxide	65-100	N/A
12042-68-1	Calcium aluminate Ca <sub>2</sub> (AlO <sub>2</sub> )	0-35	N/A
12004-88-5	Aluminum calcium oxide (Al <sub>4</sub> CaO <sub>7</sub> )	0-35	N/A

**13. DISPOSAL CONSIDERATIONS**

<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations.
<b>Contaminated packaging</b>	Empty containers should be taken for local recycling, recovery or waste disposal.
<b>Further information</b>	Can be landfilled, when in compliance with local regulations.

**14. TRANSPORT INFORMATION**

<b>DOT</b>	<b>Not regulated</b>
<b>ADR</b>	<b>Not regulated</b>
<b>RID</b>	<b>Not regulated</b>
<b>IATA-DGR</b>	<b>Not regulated</b>
<b>ICAO</b>	<b>Not regulated</b>
<b>Further information</b>	<b>Not regulated</b>

**15. REGULATORY INFORMATION**

The preparation is non-dangerous in accordance with Directive 1999/45/EC

<b>Contains</b>	Not applicable
<b>Labelling</b>	Not applicable
<b>Indication of danger</b>	Not dangerous
<b>R-phrases(s)</b>	Not applicable
<b>S-phrases(s)</b>	Not applicable

**MATERIAL SAFETY DATA SHEET AM92**

**U.S. Inventories**

CAS	Chemical Name	% Weight	TSCA*	CERCLA/SARA*	NJRTK*	MRTKL*	PRTK*
1344-28-1	Aluminum oxide	65-100	Present	N/A	sn 2891	N/A	Environmental hazard
12042-68-1	Calcium aluminate Ca <sub>2</sub> (AlO <sub>2</sub> )	0-35	Present	N/A	N/A	N/A	N/A
12004-88-5	Aluminum calcium oxide (Al <sub>4</sub> CaO <sub>7</sub> )	0-35	Present	N/A	N/A	N/A	N/A

\* TSCA - United States - Section 8 (b) Inventory (TSCA)

\* CERCLA/SARA - Hazardous Substances and their Reportable Quantities

\* NJRTK - New Jersey - Department of Health RTK List

\* MRTKL - Massachusetts - Right To Know List

\* PRTK - Pennsylvania - RTK (Right to Know) List

**International Inventories**

CAS	Chemical Name	% Weight	AICS - Australia*	EINECS - European Union*	ENCS*	TSCA*	DSL - Canada*	IECSC*	ECL*
1344-28-1	Aluminum oxide	65-100	Present	215-691-6	1-23	N/A	Present	Present	KE-01012
12042-68-1	Calcium aluminate Ca <sub>2</sub> (AlO <sub>2</sub> )	0-35	Present	234-931-0	9-2408	N/A	Present	N/A	KE-09684
12004-88-5	Aluminum calcium oxide (Al <sub>4</sub> CaO <sub>7</sub> )	0-35	N/A	234-463-7	9-2408	N/A	N/A	N/A	KE-33215

\* AICS - Australia - Inventory of Chemical Substances (AICS)

\* EINECS - European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)

\* ENCS - Japan Existing and New Chemical Substances (ENCS)

\* TSCA - (Toxic Substances Control Act) - Export Notification

\* DSL - Canada - Domestic Substances List (DSL)

\* IECSC - China - Inventory of Existing Chemical Substances Manufactured or Imported in China

\* ECL - Korea - Existing and Evaluated Chemical Substances (ECL)

**16. OTHER INFORMATION**

**Prepared By**

Sidney J. DeGarmo, CIH  
 Almatris Inc.  
 PO BOX 300  
 Bauxite AR 72011  
 USA

501-776-4677.

**Literary reference**

**Other information**

ACGIH - American Conference of Governmental Industrial Hygienist  
 AICS - Australian Inventory of Chemical Substances  
 CAS - Chemical Abstract Services  
 CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act  
 CFR - Code of Federal Regulation  
 CPR - Cardio-pulmonary Resuscitation  
 DOT - Department of Transportation  
 DSL - Domestic Substances List (Canada)  
 ECL - Korea - Existing and Evaluated Chemical Substances  
 EINECS - European Inventory of Existing Commercial Chemical Substances  
 ENCS - Japan - Existing and New Chemical Substances  
 EWC - European Waste Catalogue  
 IARC - International Agency for Research on Cancer  
 IECSC - China - Inventory of Existing Chemical Substances Manufactured or

**MATERIAL SAFETY DATA SHEET AM92**

Imported in China  
LC - Lethal Concentration  
LD - Lethal Dose  
MAK - Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"  
N/A - Not Available or Not Applicable  
NDSL - Non - Domestic Substances List (Canada)  
NIOSH - National Institute for Occupational Safety and Health  
NTP - National Toxicology Program  
OEL - Occupational Exposure Limit  
OSHA - Occupational Safety and Health Administration  
PIN - Product Identification Number  
RCRA - Resources Conservation and Recovery Act  
SARA - Superfund Amendments and Reauthorization Act  
STEL - Short Term Exposure Limit  
TCLP - Toxic Chemicals Leachate Program  
TDG - Transportation of Dangerous Goods  
TLV - Threshold Limit Value  
TSCA - Toxic Substances Control Act  
TWA - Time Weighted Average  
WGK - Water Hazard Class (Wassergefährungsklasse)  
WHMIS - Workplace Hazardous Materials Information System

End of Safety Data Sheet