



SIGMA-ALDRICH

ALDRICH CHEMICAL COMPANY, INC.
P.O. BOX 355
MILWAUKEE, WISCONSIN 53201, USA

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DATE 07/30/96
CUST#: 938609
PO#: 82809

M A T E R I A L S A F E T Y D A T A S H E E T P A G E 1

SECTION 1. - - - - - CHEMICAL IDENTIFICATION- - - - -

CATALOG #: 32840-5
NAME: ALUMINUM, GRANULES, -10+30 MESH, 98%

SECTION 2. - - - - - COMPOSITION/INFORMATION ON INGREDIENTS - - - - -

CAS #: 7429-90-5
MF: AL
EC NO: 231-072-3

SYNONYMS

A 00 * A 95 * A 995 * A 999 * AA 1099 * AA1199 * AD 1 * AD1M * ADO *
AE * ALAUN (GERMAN) * ALLBRI ALUMINUM PASTE AND POWDER * ALUMINA
FIBRE * ALUMINIUM * ALUMINIUM BRONZE * ALUMINIUM FLAKE * ALUMINUM
(ACGIH) * ALUMINUM 27 * ALUMINUM A00 * ALUMINUM DEHYDRATED * ALUMINUM
METAL (OSHA) * ALUMINUM, MOLTEN (NA9260) (DOT) * ALUMINUM POWDER *
ALUMINUM POWDER, COATED (UN1309) (DOT) * ALUMINUM POWDER, UNCOATED
(UN1396) (DOT) * AO A1 * AR2 * AV00 * AV000 * C.I. 77000 * EMANAY
ATOMIZED ALUMINUM POWDER * JISC 3108 * JISC 3110 * L16 * METANA *
METANA ALUMINUM PASTE * NA9260 (DOT) * NORAL ALUMINUM * NORAL EXTRA
FINE LINING GRADE * NORAL INK GRADE ALUMINUM * NORAL NON-LEAFING
GRADE * PAP-1 * UN1309 (DOT) * UN1396 (DOT) *

SECTION 3. - - - - - HAZARDS IDENTIFICATION - - - - -

LABEL PRECAUTIONARY STATEMENTS
AIR AND MOISTURE SENSITIVE
STORE UNDER NITROGEN.

SECTION 4. - - - - - FIRST-AID MEASURES- - - - -

IN CASE OF CONTACT, IMMEDIATELY FLUSH EYES WITH COPIOUS AMOUNTS OF
WATER FOR AT LEAST 15 MINUTES.
FLUSH SKIN WITH WATER.
IF INHALED, REMOVE TO FRESH AIR.
WASH CONTAMINATED CLOTHING BEFORE REUSE.

SECTION 5. - - - - - FIRE FIGHTING MEASURES - - - - -

EXTINGUISHING MEDIA
DRY CHEMICAL POWDER.

SPECIAL FIREFIGHTING PROCEDURES

FOR FIRES INVOLVING THIS MATERIAL, DO NOT ENTER ANY ENCLOSED OR
CONFINED FIRE SPACE WITHOUT PROPER PROTECTIVE EQUIPMENT. THIS MAY
INCLUDE SELF-CONTAINED BREATHING APPARATUS TO PROTECT AGAINST THE
HAZARDOUS EFFECTS OF THE NORMAL PRODUCTS OF COMBUSTION OR OXYGEN

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RESEARCH**

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- - - - -

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DEFICIENCY.

UNUSUAL FIRE AND EXPLOSIONS HAZARDS
EMITS TOXIC FUMES UNDER FIRE CONDITIONS.

SECTION 6. - - - - - ACCIDENTAL RELEASE MEASURES- - - - -

SWEEP UP, PLACE IN A BAG AND HOLD FOR WASTE DISPOSAL.

SECTION 7. - - - - - HANDLING AND STORAGE- - - - -

REFER TO SECTION 8.

SECTION 8. - - - - - EXPOSURE CONTROLS/PERSONAL PROTECTION- - - - -

CHEMICAL SAFETY GOGGLES.
COMPATIBLE CHEMICAL-RESISTANT GLOVES.
MECHANICAL EXHAUST REQUIRED.
NIOSH/MSHA-APPROVED RESPIRATOR IN NONVENTILATED AREAS AND/OR FOR
EXPOSURE ABOVE THE ACGIH TLV.
SAFETY SHOWER AND EYE BATH.
AVOID INHALATION.
AVOID CONTACT WITH EYES, SKIN AND CLOTHING.
AVOID PROLONGED OR REPEATED EXPOSURE.
WASH THOROUGHLY AFTER HANDLING.
KEEP TIGHTLY CLOSED.
STORE IN A COOL DRY PLACE.

SECTION 9. - - - - - PHYSICAL AND CHEMICAL PROPERTIES - - - - -

APPEARANCE AND ODOR
GREY GRANULES

PHYSICAL PROPERTIES
SPECIFIC GRAVITY: 2.700

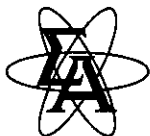
SECTION 10. - - - - - STABILITY AND REACTIVITY - - - - -

INCOMPATIBILITIES
ACIDS
ACID CHLORIDES
OXIDIZING AGENTS
HALOGENS
AIR SENSITIVE
MOISTURE SENSITIVE

HAZARDOUS COMBUSTION OR DECOMPOSITION PRODUCTS
TOXIC FUMES OF:
ALUMINUM OXIDE

SECTION 11. - - - - - TOXICOLOGICAL INFORMATION - - - - -

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ACUTE EFFECTS

MAY BE HARMFUL IF SWALLOWED.
MAY BE HARMFUL IF INHALED.
MAY CAUSE IRRITATION.
TO THE BEST OF OUR KNOWLEDGE, THE CHEMICAL, PHYSICAL, AND
TOXICOLOGICAL PROPERTIES HAVE NOT BEEN THOROUGHLY INVESTIGATED.

RTECS #: BD0330000

ALUMINUM
ONLY SELECTED REGISTRY OF TOXIC EFFECTS OF CHEMICAL SUBSTANCES
(RTECS) DATA IS PRESENTED HERE. SEE ACTUAL ENTRY IN RTECS FOR
COMPLETE INFORMATION.

SECTION 12. - - - - - ECOLOGICAL INFORMATION - - - - -

DATA NOT YET AVAILABLE.

SECTION 13. - - - - - DISPOSAL CONSIDERATIONS - - - - -

MATERIAL IN THE ELEMENTAL STATE SHOULD BE RECOVERED FOR REUSE OR
RECYCLING.
OBSERVE ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS.

SECTION 14. - - - - - TRANSPORT INFORMATION - - - - -

CONTACT ALDRICH CHEMICAL COMPANY FOR TRANSPORTATION INFORMATION.

SECTION 15. - - - - - REGULATORY INFORMATION - - - - -

EUROPEAN INFORMATION

EC INDEX NO: 013-001-00-6

REVIEWS, STANDARDS, AND REGULATIONS

OEL=MAK
ACGIH TLV-TWA 10 MG/M3, DUST 85INA8 6,46,91
EPA FIFRA 1988 PESTICIDE SUBJECT TO REGISTRATION OR RE-REGISTRATION
FEREAC 54,7740,89
OSHA PEL (GEN INDU):8H TWA 15 MG(AL)/M3, TOTAL DUST
CFRGBR 29,1910.1000,94
OSHA PEL (GEN INDU):8H TWA 5 MG(AL)/M3, RESPIRABLE FRACTION
CFRGBR 29,1910.1000,94
OSHA PEL (CONSTRUC):8H TWA 15 MG(AL)/M3, TOTAL DUST
CFRGBR 29,1926.55,94
OSHA PEL (CONSTRUC):8H TWA 5 MG(AL)/M3, RESPIRABLE FRACTION
CFRGBR 29,1926.55,94
OSHA PEL (SHIPYARD):8H TWA 15 MG(AL)/M3, TOTAL DUST
CFRGBR 29,1915.1000,93
OSHA PEL (SHIPYARD):8H TWA 5 MG(AL)/M3, RESPIRABLE FRACTION

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CFRGBR 29,1915.1000,93
OEL-AUSTRALIA:TWA 10 MG/M3 JAN93
OEL-AUSTRALIA:TWA 2 MG/M3 (SALTS) JAN93
OEL-AUSTRALIA:TWA 5 MG/M3 (FUMES) JAN93
OEL-AUSTRALIA:TWA 5 MG/M3 (RESP. DUST) JAN93
OEL-BELGIUM:TWA 10 MG/M3 JAN93
OEL-BELGIUM:TWA 2 MG/M3 (SALTS) JAN93
OEL-BELGIUM:TWA 5 MG/M3 (FUMES) JAN93
OEL-BELGIUM:TWA 5 MG/M3 (RESP. DUST) JAN93
OEL-DENMARK:TWA 10 MG/M3 (RESP. DUST) JAN93
OEL-DENMARK:TWA 2 MG/M3 (SALTS) JAN93
OEL-DENMARK:TWA 5 MG/M3 (FUMES) JAN93
OEL-FINLAND:TWA 2 MG/M3 (SALTS) JAN93
OEL-FRANCE:TWA 10 MG/M3 JAN93
OEL-FRANCE:TWA 2 MG/M3 (SALTS) JAN93
OEL-FRANCE:TWA 5 MG/M3 (FUMES) JAN93
OEL-FRANCE:TWA 5 MG/M3 (RESP. DUST) JAN93
OEL-GERMANY:TWA 6 MG/M3 JAN93
OEL-HUNGARY:STEL 5 MG/M3 JAN93
OEL-HUNGARY:TWA 2 MG/M3;STEL 4 MG/M3 (SALTS) JAN93
OEL-THE NETHERLANDS:TWA 10 MG/M3 (RESP. DUST) JAN93
OEL-THE NETHERLANDS:TWA 2 MG/M3 (SALTS) JAN93
OEL-RUSSIA:STEL 2 MG/M3 JAN93
OEL-SWEDEN:TWA 10 MG/M3 (RESP. DUST) JAN93
OEL-SWEDEN:TWA 2 MG/M3 (SALTS) JAN93
OEL-SWEDEN:TWA 4 MG/M3 JAN93
OEL-SWEDEN:TWA 5 MG/M3 (RESP. DUST) JAN93
OEL-SWITZERLAND:TWA 2 MG/M3 (SALTS) JAN93
OEL-SWITZERLAND:TWA 6 MG/M3 (FUMES) JAN93
OEL-SWITZERLAND:TWA 6 MG/M3 JAN93
OEL-SWITZERLAND:TWA 6 MG/M3 (RESP. DUST) JAN93
OEL-UNITED KINGDOM:TWA 10 MG/M3;STEL 20 MG/M3 JAN93
OEL-UNITED KINGDOM:TWA 10 MG/M3;STEL 20 MG/M3 (RESP. DUST) JAN93
OEL-UNITED KINGDOM:TWA 2 MG/M3 (SALTS) JAN93
OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA CHECK ACGIH TLV
OEL IN NEW ZEALAND, SINGAPORE, VIETNAM CHECK ACGIH TLV
NIOSH REL TO ALUMINUM METAL, ALKYL-AIR:10H TWA 2 MG/M3
NIOSH* DHHS #92-100,92
NIOSH REL TO ALUMINUM METAL, PYRO POWDERS-AIR:10H TWA 5 MG/M3
NIOSH* DHHS #92-100,92
NIOSH REL TO ALUMINUM METAL, RESPIRABLE FRACTION-AIR:10H TWA 5 MG/M3
NIOSH* DHHS #92-100,92
NIOSH REL TO ALUMINUM METAL, SOLUBLE SALTS-AIR:10H TWA 2 MG/M3
NIOSH* DHHS #92-100,92
NIOSH REL TO ALUMINUM METAL, TOTAL DUST-AIR:10H TWA 10 MG/M3
NIOSH* DHHS #92-100,92
NIOSH REL TO ALUMINUM METAL, WELDING FUMES-AIR:10H TWA 5 MG/M3
NIOSH* DHHS #92-100,92
NOHS 1974: HZD M0661; NIS 267; TNF 39251; NOS 143; TNE 556034
NOHS 1974: HZD M2258; NIS 43; TNF 2279; NOS 44; TNE 31336

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NOES 1983: HZD M0661; NIS 281; TNF 61020; NOS 158; TNE 1033237; TFE 99205
NOES 1983: HZD X3088; NIS 27; TNF 1465; NOS 25; TNE 20323; TFE 1644
NOES 1983: HZD X5911; NIS 22; TNF 3612; NOS 25; TNE 31368; TFE 279
NOES 1983: HZD X5976; NIS 52; TNF 2973; NOS 57; TNE 54400; TFE 8218
NOES 1983: HZD X5977; NIS 2; TNF 23; NOS 2; TNE 967; TFE 131
NOES 1983: HZD X5980; NIS 3; TNF 81; NOS 4; TNE 867
EPA TSCA SECTION 8(B) CHEMICAL INVENTORY
EPA TSCA SECTION 8(D) UNPUBLISHED HEALTH/SAFETY STUDIES
ON EPA IRIS DATABASE
EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, APRIL 1996
NIOSH ANALYTICAL METHOD, 1994: ALUMINUM AND COMPOUNDS, AS AL, 7013
NIOSH ANALYTICAL METHOD, 1994: ELEMENTS BY ICP, 7300
NIOSH ANALYTICAL METHOD, 1994: METALS IN URINE, 8310
OSHA ANALYTICAL METHOD #ID-125G

SECTION 16. - - - - - OTHER INFORMATION - - - - -

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