

SAFETY DATA SHEET



A Honeywell Company

Molsiv Adsorbents 13X APG 4x8

8944901

Version 2.0

Revision Date 05/22/2015

Print Date 04/08/2016

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Molsiv Adsorbents 13X APG 4x8

Number : 8944901

Product Use Description : Adsorbents

Manufacturer or supplier's details : UOP LLC
25 E. Algonquin Road
Des Plaines, IL 60017-5017
USA

Telephone : +1-847-391-2000
Telefax : +1-847-391-2253

In case of emergency call : **Medical: 1-800-498-5701 or +1-303-389-1414**
: **Transportation (CHEMTREC): 1-800-424-9300 or +1-703-527-3887**
: (24 hours/day, 7 days/week)

SECTION 2. HAZARDS IDENTIFICATION

Emergency Overview

Form : Beads or pellets

Color : white to tan

Odor : none

Classification of the substance or mixture

Classification of the substance : Carcinogenicity, Category 1A, Inhalation or mixture

GHS Label elements, including precautionary statements

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Symbol(s)



Signal word

: Danger

Hazard statements

: May cause cancer by inhalation.

Precautionary statements

: **Prevention:**

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Use personal protective equipment as required.

Response:

IF exposed or concerned: Get medical advice/ attention.

Storage:

Store locked up.

Disposal:

Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified

: The product gets hot as it first adsorbs water.

Carcinogenicity

| | | |
|--------|---|------------|
| NTP: | Quartz (SiO ₂) Known carcinogen | 14808-60-7 |
| IARC: | Quartz (SiO ₂) Group 1: Carcinogenic to humans | 14808-60-7 |
| ACGIH: | Quartz (SiO ₂) A2: Suspected human carcinogen | 14808-60-7 |

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SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Mixture

| Chemical Name | CAS-No. | Concentration |
|--|------------|---------------|
| Zeolite, cuboidal, crystalline, synthetic, non-fibrous | 1318-02-1 | >70.00 % |
| Mineral binder | - | <30.00 % |
| Quartz (SiO ₂) | 14808-60-7 | <5.00 % |

Note : Composition as shown represents the chemical composition of the product and is not representing the composition for inventory purposes. See Section 15 for inventory information.

SECTION 4. FIRST AID MEASURES

- Inhalation : Remove to fresh air. If symptoms persist, call a physician.
- Skin contact : Wash off with soap and plenty of water. If skin irritation persists, call a physician.
- Eye contact : Rinse immediately with plenty of water for at least 15 minutes. If eye irritation persists, consult a physician.
- Ingestion : Drink at least 2 glasses of water. Obtain medical attention. Never give anything by mouth to an unconscious person.

Notes to physician

- Treatment : This product is a desiccant and generates heat as it adsorbs water. The used product can contain material of a hazardous nature. Identify that material and treat symptomatically.

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SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Not combustible.
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during firefighting : The product itself does not burn.
The used product can retain material of a hazardous nature.
Identify that material and inform the fire fighters.
- Special protective equipment for firefighters : In the case of respirable dust and/or fumes, use self-contained breathing apparatus and dust impervious protective suit.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions : For personal protection see section 8.
- Environmental precautions : No special environmental precautions required.
- Methods for cleaning up : Sweep, shovel or vacuum spilled product into appropriate containers (do not use a vacuum if material has contacted a hydrocarbon material).
Pick up and arrange disposal without creating dust.
Never return spills in original containers for re-use.
Spilled product should be disposed of in accordance with all applicable government regulations.

SECTION 7. HANDLING AND STORAGE

Handling

- Handling : Handle and open container with care.
Avoid dust formation.
Avoid contact with skin and eyes.
Provide an electrical ground connection during loading and transfer operations to avoid static discharge in an explosive atmosphere and to prevent persons handling the product from receiving static shocks.
A copy of UOP's booklet, "Precautions & Safe Practices for

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Handling Zeolite Molecular Sieve Adsorbents in Process Units",
can be obtained from your UOP representative at no cost.

Storage

Requirements for storage : Store in original container.
areas and containers : Keep in a dry place.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Protective measures : Handle in accordance with good industrial hygiene and safety practice.

Engineering measures : Ensure adequate ventilation, especially in confined areas.

Eye protection : Safety glasses
Safety goggles

Hand protection : Protective gloves

Skin and body protection : Work uniform and gloves to prevent prolonged contact.

Respiratory protection : In case of insufficient ventilation, wear suitable respiratory equipment.
Breathing apparatus with filter: NIOSH classification N-100 or if oil/liquid aerosols are present P-100 (42 CFR 84).

Exposure Guidelines

| Components | CAS-No. | Value | Control parameters | Update | Basis |
|--|------------|---|--------------------|--------|--|
| Zeolite, cuboidal, crystalline, synthetic, non-fibrous | 1318-02-1 | TWA : Time weighted average | 1 mg/m3 | 2008 | ACGIH:US. ACGIH Threshold Limit Values |
| Further information | : | Form of exposure : Respirable fraction. | | | |
| Quartz (SiO ₂) | 14808-60-7 | TWA : Time weighted average | 0.025 mg/m3 | 2008 | ACGIH:US. ACGIH Threshold Limit Values |
| Further | : | Form of exposure : Respirable fraction. | | | |

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information

| | | | | | |
|----------------------------|------------|---|------------------------|------|--|
| Quartz (SiO ₂) | 14808-60-7 | REL : Recomm ended exposure limit (REL): | 0.05 mg/m ³ | 2005 | NIOSH/GUIDE:US. NIOSH: Pocket Guide to Chemical Hazards |
| Further information | : | Form of exposure : Respirable dust. | | | |

| | | | | | |
|----------------------------|------------|--------------------------------------|-----------------------|------|---|
| Quartz (SiO ₂) | 14808-60-7 | TWA : Time weighted average | 0.1 mg/m ³ | 1989 | Z1A:US. OSHA Table Z-1-A (29 CFR 1910.1000) |
| Further information | : | Form of exposure : Respirable dust. | | | |

| | | | | | |
|----------------------------|------------|--------------------------------------|--|------|--|
| Quartz (SiO ₂) | 14808-60-7 | TWA : Time weighted average | 2.4 millions of particles per cubic foot of air The exposure limit is calculated from the equation, 250/(%SiO ₂ +5) , using a value of 100% SiO ₂ . Lower percentages of SiO ₂ will yield higher exposure limits. | 2000 | Z3:US. OSHA Table Z-3 (29 CFR 1910.1000) |
| Further information | : | Form of exposure : Respirable. | | | |

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| | | | | | |
|----------------------------|----------------------------------|--------------------------------------|--|------|--|
| Quartz (SiO ₂) | 14808-60-7 | TWA : Time weighted average | 0.1 mg/m ³ The exposure limit is calculated from the equation, 10/(%SiO ₂ +2), using a value of 100% SiO ₂ . Lower percentages of SiO ₂ will yield higher exposure limits. | 2000 | Z3:US. OSHA Table Z-3 (29 CFR 1910.1000) |
| Further information | : Form of exposure : Respirable. | | | | |

| | | | | | |
|----------------------------|----------------------------------|--------------------------------------|---|------|--|
| Quartz (SiO ₂) | 14808-60-7 | TWA : Time weighted average | 0.3 mg/m ³ The exposure limit is calculated from the equation, 30/(%SiO ₂ +2), using a value of 100% SiO ₂ . Lower values of % SiO ₂ will give higher exposure limits. | 2000 | Z3:US. OSHA Table Z-3 (29 CFR 1910.1000) |
| Further information | : Form of exposure : Total dust. | | | | |

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|----------------|------------------------|
| Physical state | : Beads or pellets |
| Color | : white to tan |
| Odor | : none |
| pH | : Note: Not applicable |

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Melting point/range : > 400 °C

Boiling point/boiling range : Note: Not applicable

Flash point : Note: Not applicable

Density : > 2.0 g/cm³

Specific gravity : > 1.0

Water solubility : Note: insoluble

Solubility in other solvents : Note: insoluble

Bulk density : Note: For further information, refer to the product technical data sheet.

SECTION 10. STABILITY AND REACTIVITY

Chemical stability : Stable

Incompatible materials to avoid : Sudden contact with high concentrations of chemicals having high heats of adsorption such as olefins, HCl, etc.
When first wetted, the product can heat up to the boiling point of water. Flood with water to cool material.

Hazardous decomposition products : No decomposition if used as directed.
Hydrocarbons and other materials that contact the product during normal use can be retained on the product.
It is reasonable to expect that decomposition products will

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come from these retained materials of use.

SECTION 11. TOXICOLOGICAL INFORMATION

| | |
|---------------------------|---|
| Acute oral toxicity | : LD50 Oral: > 32,000 mg/kg Species: Rat |
| Acute inhalation toxicity | : Note: no data available |
| Acute dermal toxicity | : LD50 Dermal: > 2,000 mg/kg Species: Rabbit |
| Skin irritation | : Species: Rabbit Classification: Not classified as a skin irritant in animal testing. |
| Eye irritation | : Species: Rabbit Result: mild transient effects |
| Further information | : Note: The toxicological data has been taken from products of similar composition. |

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects

| | |
|---|---------------------------|
| Toxicity to fish | : Note: no data available |
| Toxicity to daphnia and other aquatic invertebrates | : Note: no data available |
| Toxicity to algae | : Note: no data available |

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Elimination information (persistence and degradability)

Bioaccumulation : Note: no data available

Mobility : Note: no data available

Biodegradability : Note: no data available

Further information on ecology

Additional ecological information : No information on ecology is available.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods : This product (in its fresh unused state) is not listed by generic name or trademark name in the U.S. EPA's RCRA regulations and does not possess any of the four identifying characteristics of hazardous waste (ignitability, corrosivity, reactivity or toxicity).
Materials of a hazardous nature that contact the product during normal use may be retained on this product. The user of the product must identify the hazards associated with the retained material in order to assess the waste disposal options.

SECTION 14. TRANSPORT INFORMATION

DOT Not dangerous goods

TDG Not dangerous goods

IATA Not dangerous goods

IMDG Not dangerous goods

SECTION 15. REGULATORY INFORMATION

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Inventories

- US. Toxic Substances Control Act : On the inventory, or in compliance with the inventory
- Australia. Industrial Chemical (Notification and Assessment) Act : On the inventory, or in compliance with the inventory
- Canada. Canadian Environmental Protection Act (CEPA). Domestic Substances List (DSL) : All components of this product are on the Canadian DSL.
- Japan. Kashin-Hou Law List : On the inventory, or in compliance with the inventory
- Korea. Toxic Chemical Control Law (TCCL) List : On the inventory, or in compliance with the inventory
- Philippines. The Toxic Substances and Hazardous and Nuclear Waste Control Act : On the inventory, or in compliance with the inventory
- China. Inventory of Existing Chemical Substances : On the inventory, or in compliance with the inventory
- New Zealand. Inventory of Chemicals (NZIoC), as published by ERMA New Zealand : On the inventory, or in compliance with the inventory
- Note : Zeolites are considered Statutory Mixtures for Inventory purposes, for more information, contact SafetyDataSheet@honeywell.com.

National regulatory information

- SARA 302 Components** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
: Quartz (SiO₂) 14808-60-7
- SARA 313 Components** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis)

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SARA 311/312 Hazards

reporting levels established by SARA Title III, Section 313.
: Quartz (SiO₂) 14808-60-7

: Chronic Health Hazard

California Prop. 65

: WARNING! This product contains a chemical known to the State of California to cause cancer.
Quartz (SiO₂) 14808-60-7

Massachusetts RTK

: Quartz (SiO₂) 14808-60-7

New Jersey RTK

: Quartz (SiO₂) 14808-60-7

Pennsylvania RTK

: Quartz (SiO₂) 14808-60-7

WHMIS Classification

: D2A: Very Toxic Material Causing Other Toxic Effects
This product has been classified according to the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

SECTION 16. OTHER INFORMATION

| | HMIS III | NFPA |
|-----------------|----------|------|
| Health hazard | : 1* | 1 |
| Flammability | : 0 | 0 |
| Physical Hazard | : 1 | |
| Instability | : | 1 |

* - Chronic health hazard

Hazard rating and rating systems (e.g. HMIS® III, NFPA): This information is intended solely for the use of individuals trained in the particular system.

Further information

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The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. Final determination of suitability of any material is the sole responsibility of the user. This information should not constitute a guarantee for any specific product properties.

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

Previous Issue Date: 02/07/2015

Prepared by Honeywell Performance Materials and Technologies Product Stewardship Group



SAFETY DATA SHEET

Aluminosilicate.....

1 IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY/UNDERTAKING

| | |
|---|---|
| PRODUCT NAME | Aluminosilicate..... |
| SYNONYMS, TRADE NAMES | Sylosiv....., , Crystalline Aluminosilicate, , Molecular Sieve.....Z3-01, Z3-02, Z3-03, Z3-03M, Z3-03EP, Z3-04, 3A-8KM, 3A-9KM, Sylobead MS C.....512, 514, 518, 522, 542, 544, 548, 562, 564, , Zeochem..... |
| SUPPLIER | UNIVAR LTD 46 Peckover Street BRADFORD West Yorkshire United Kingdom BD1 5BD Tel: +44 1274 377000 Fax: +44 1274 377001 sds@univareurope.com |
| SDS No. | S908 |
| Emergency Contact Number (Office Hours) | +441274 377070 |

2 HAZARDS IDENTIFICATION

CLASSIFICATION -

3 COMPOSITION/INFORMATION ON INGREDIENTS

| | |
|-----------------|-----------|
| EC (EINECS) NO. | 215-283-8 |
| CAS-NO. | 1318-02-1 |

4 FIRST-AID MEASURES

INHALATION

Move the exposed person to fresh air at once. Rinse nose and mouth with water. Get medical attention if any discomfort continues.

INGESTION

Immediately rinse mouth and provide fresh air. Get medical attention if any discomfort continues. Do not induce vomiting.

SKIN CONTACT

Remove affected person from source of contamination. Remove contaminated clothing. Wash the skin immediately with soap and water. Get medical attention if any discomfort continues.

EYE CONTACT

Make sure to remove any contact lenses from the eyes before rinsing. Promptly wash eyes with plenty of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

5 FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

PROTECTIVE MEASURES IN FIRE

Wear full protective clothing.

6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS

Wear protective clothing as described in Section 8 of this safety data sheet.

REVISION DATE: 6th September 2007

Aluminosilicate.....**ENVIRONMENTAL PRECAUTIONS**

Do not discharge onto the ground or into water courses.

SPILL CLEAN UP METHODS

Avoid generation and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water.

7 HANDLING AND STORAGE**USAGE PRECAUTIONS**

Avoid spilling, skin and eye contact. Avoid handling which leads to dust formation.

STORAGE PRECAUTIONS

Store in tightly closed original container in a dry, cool and well-ventilated place. Keep in original container.

8 EXPOSURE CONTROLS/PERSONAL PROTECTION**PROTECTIVE EQUIPMENT****ENGINEERING MEASURES**

Provide adequate ventilation. Observe Workplace Exposure Limits and minimise the risk of inhalation of dust.

RESPIRATORY EQUIPMENTNo specific recommendation made, but protection against nuisance dust must be used when the general level exceeds 10 mg/m³.**HAND PROTECTION**

Use suitable protective gloves if risk of skin contact.

EYE PROTECTION

Wear approved safety goggles.

HYGIENE MEASURES

DO NOT SMOKE IN WORK AREA! Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. When using do not eat, drink or smoke.

9 PHYSICAL AND CHEMICAL PROPERTIES

| | |
|--------------------------|----------------------------|
| APPEARANCE | Powder, dust Solid Pellets |
| COLOUR | White Beige. |
| ODOUR | Odourless |
| SOLUBILITY | Insoluble in water |
| pH-VALUE, CONC. SOLUTION | 9.0 - 11.5 |

10 STABILITY AND REACTIVITY**STABILITY**

Stable under normal temperature conditions.

CONDITIONS TO AVOID

Avoid excessive heat for prolonged periods of time.

11 TOXICOLOGICAL INFORMATION

TOXIC DOSE 1 - LD 50 >10000 mg/kg (oral rat)

INHALATION

Dust in high concentrations may irritate the respiratory system.

INGESTION

May cause discomfort if swallowed.

REVISION DATE: 6th September 2007

Aluminosilicate.....**SKIN CONTACT**

Powder may irritate skin.

EYE CONTACT

Particles in the eyes may cause irritation and smarting.

12 ECOLOGICAL INFORMATION**ECOTOXICITY**

Not regarded as dangerous for the environment.

LC 50, 96 Hrs, FISH mg/l 1800 - 3200

EC 50, 48 Hrs, DAPHNIA, mg/l 1000 - 1800

MOBILITY

The product is insoluble in water.

13 DISPOSAL CONSIDERATIONS**DISPOSAL METHODS**

Dispose of waste and residues in accordance with local authority requirements.

14 TRANSPORT INFORMATION

ROAD TRANSPORT NOTES Not Classified

RAIL TRANSPORT NOTES Not Classified.

SEA TRANSPORT NOTES Not Classified.

AIR TRANSPORT NOTES Not Classified.

15 REGULATORY INFORMATION**RISK PHRASES**

NC

Not classified.

STATUTORY INSTRUMENTS

Chemicals (Hazard Information and Packaging) Regulations.

APPROVED CODE OF PRACTICE

Classification and Labelling of Substances and Preparations Dangerous for Supply. Safety Data Sheets for Substances and Preparations.

GUIDANCE NOTES

Workplace Exposure Limits EH40. CHIP for everyone HSG(108).

16 OTHER INFORMATION**ISSUED BY**

Univar Ltd

REVISION DATE 6th September 2007

REV. NO./REPL. SDS GENERATED 03

SDS NO. S908

SAFETY DATA SHEET STATUS

Approved.

DATE 24th January 2007

SIGNATURE Jitendra Panchal



SAFETY DATA SHEET (REGULATION (EC) No 1907/2006 - REACH)
Version: N°3 (03/11/2011)
Axens

Date: 12/12/2013 Page 1/10
Revision: N°5 (23/06/2011)

A.A. GRADE D - 11599

SAFETY DATA SHEET

(REACH regulation (EC) n° 1907/2006 - n° 453/2010)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : A.A. GRADE D
Product code : 11599.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Adsorbent for gas and liquid treatment. (For further information, refer to the product technical data sheet).
Active Alumina

Use descriptor system (REACH) :

PROC 5 / PROC 4 / PROC 10 / PROC 11 / PROC 13 / PROC 19 / PROC 7 / PROC 9 / PROC 8a / PROC8b / PROC 2 /
PROC 23 / PROC 24 / PROC 25 / PROC 14 / PROC 3
ERC 8e / ERC 7 / ERC 3 / ERC 2 / ERC 11a / ERC 4 / ERC 8a / ERC 8d / ERC 5 / ERC10a / ERC 1
PC 20 / PC 29 / PC 38 / PC 32 / PC 35 / PC 31 / PC 2 / PC 16 / PC 15 / PC 14 / PC 3 / PC 1 / PC 0
SU 10 / SU 12 / SU 13 / SU 14 / SU 17 / SU 8 / SU 9

1.3. Details of the supplier of the safety data sheet

Registered company name : Axens.
Address : 89, Boulevard FRANKLIN ROOSEVELT.92508.RUEIL-MALMAISON.FRANCE.
Telephone : +33 (0)1 47 14 21 00. Fax : +33 (0)1 47 51 87 95.
fds@axens.net
<http://www.axens.net>

1.4. Emergency telephone number : +33.(0)1.45.42.59.59.

Association/Organisation : INRS / ORFILA - <http://www.centres-antipoison.net>.

Other emergency numbers

International Emergency Telephone Number (CARECHEM) :
+44(0) 1235 239 670 : (Europe, Americas, Middle East, Africa, Israel (Europe and English Language speaking countries)
+44(0) 1235 239 671 : Middle East/Africa (Arabic speaking countries)
Asia-Pacific region (excluding China) : +65 3158 1074
China : +86 10 5100 3039
USA/Canada : +1 215 207 0061

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

In compliance with EC regulation No. 1272/2008 and its amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.
This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.



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In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

This mixture does not present a physical hazard. Refer to the recommendations regarding the other products present on the site.

This mixture does not present a health hazard with the exception of possible occupational exposure thresholds (see paragraphs 3 and 8).

This mixture does not present an environmental hazard. No known or foreseeable environmental damage under standard conditions of use.

2.2. Label elements

In compliance with EC regulation No. 1272/2008 and its amendments.

Hazard statements :

In compliance with directives 67/548/EEC, 1999/45/EC and their amendments.

Safety phrase :

S 22

Do not breathe dust.

2.3. Other hazards

Avoid the formation or spread of dust in the atmosphere.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

No substances fulfil the criteria set forth in annexe II section A of the REACH regulation (EC) n° 1907/2006.

3.2. Mixtures

Composition :

| Identification | (EC) 1272/2008 | 67/548/EEC | Note | % |
|---|----------------|------------|------|-----------------|
| INDEX: 1344_28_1 CAS: 1344-28-1 EC: 215-691-6 REACH: 01-2119529248-35 ALUMINIUM OXIDE | | | [1] | 50 <= x % < 100 |

Information on ingredients :

[1] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of exposure by inhalation :

Move the affected person away from the contaminated area and into the fresh air.

In the event of splashes or contact with eyes :

Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

Rinse with plenty of water.



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A.A. GRADE D - 11599

In the event of swallowing :

Seek medical attention, showing the label.
Rinse mouth out with water.

4.2. Most important symptoms and effects, both acute and delayed

The main symptoms and effects known are described in the label (§ 2) and / or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed

Symptomatic treatment.

SECTION 5 : FIREFIGHTING MEASURES

Non-flammable.

5.1. Extinguishing media

Suitable methods of extinction

All extinguishing agents can be used.

Unsuitable methods of extinction

None to our knowledge. If there is a fire close by, use suitable extinguishing agents.

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon dioxide (CO₂)

5.3. Advice for firefighters

No data available.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

Since the product is in the form of balls, it can cause the floor to be very slippery.

For fire-fighters

Fire-fighters will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Prevent any material from entering drains or waterways.

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

If necessary, wash with water following recovery.

6.4. Reference to other sections

No data available.



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SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the mixture is handled.

7.1. Precautions for safe handling

Always wash hands after handling.
Remove and wash contaminated clothing before re-using.
Does not require any specific or particular measures.
Avoid the formation or spread of dust in the atmosphere.
Ventilation.

Fire prevention :

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.
Observe precautions stated on label and also industrial safety regulations.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the mixture is used.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep away from incompatible materials.
Keep the container tightly closed in a cool, well ventilated place.
To guarantee the quality and properties of the product keep :
- protected from humidity and bad weather conditions.
- between 0°C et 40°C.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

.....

Occupational exposure limits :

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values, 2010) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|----------|--------|-----------|--------------|------------|
| 1344-28-1 | 10 mg/m3 | - | - | - | - |

- Belgium (Order of 19/05/2009, 2010) :

| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : |
|-----------|----------|--------|-----------|--------------|------------|
| 1344-28-1 | 10 mg/m3 | - | - | - | - |

- China (GBZ 2.1, 2007) :

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| | | | | | | |
|--|-----------|-------------|-----------|--------------|------------|----------|
| CAS | TWA : | STEL : | Anm : | TWA : | STEL : | Anm : |
| 1344-28-1 | 4 mg/m3 | 6 mg/m3 | - | - | T | |
| - France (INRS - ED984 :2008) : | | | | | | |
| CAS | VME-ppm : | VME-mg/m3 : | VLE-ppm : | VLE-mg/m3 : | Notes : | TMP No : |
| 1344-28-1 | - | 10 | - | - | - | - |
| - Hong-Kong (Code of practice on control of air impurities (Chemicals substances) in the workplace, 04/2002) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | I | |
| - Ireland (Code of practice for the safety, Health and Welfare at Work, 2010) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 4 mg/m3 | - | - | - | R | |
| - Japan (JSOH, 20/05/2009) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 0.5 mg/m3 | - | - | - | R | |
| - USA / OSHA PEL (Occupational Safety and Health Administration, Permissible Exposure Limits) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 5 mg/m3 | - | - | - | R | |
| - UK / WEL (Workplace exposure limits, EH40/2005, 2007) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | TI | |
| - Denmark (2007) : | | | | | | |
| CAS | TWA : | TWA : | Anm : | | | |
| 1344-28-1 | - | 5 mg/m3 | - | | | |
| - Norway (Veiledning om administrative normer for forurensning i arbeidsatmosfære, May 2007) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | - | |
| - Sweden (AFS 2007:2) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 2 mg/m3 | - | - | - | R | |
| - Australia (NOHSC: 3008, 1995) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | - | |
| - Canada / Alberta (Occupational health and safety code, 2009) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | - | |
| - Canada / British Colombia (2009) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | 20 mg/m3 | - | - | T | |
| - Malaysia : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | - | |
| - Canada / Quebec (Regulations on occupational health and safety) : | | | | | | |
| CAS | TWA : | STEL : | Ceiling : | Definition : | Criteria : | |
| 1344-28-1 | 10 mg/m3 | - | - | - | T | |

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Before handling powders or dust emission, wear mask goggles in accordance with standard EN166.

Safety spectacles with side shields.

- Hand protection

Wear suitable protective gloves in the event of prolonged or repeated skin contact.

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN374.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- Natural latex
- Nitrile rubber (butadiene-acrylonitrile copolymer rubber (NBR))
- Neoprene® (Polychloroprene)
- PVC (polyvinyl chloride)

Recommended properties :

- Impervious gloves in accordance with standard EN374

- Body protection

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

Protective clothing with elasticated cuffs and closed neck.

- Respiratory protection

Avoid breathing dust.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149.

Category :

- FFP3



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SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

General information :

Physical state : Solid in granules.

Important health, safety and environmental information

| | |
|---|---------------|
| pH : | Not relevant. |
| Boiling point/boiling range : | Not relevant. |
| Flash point interval : | Not relevant. |
| Vapour pressure (50°C) : | Not relevant. |
| Density : | < 1 |
| Water solubility : | Insoluble. |
| Melting point/melting range : | 2000 °C. |
| Self-ignition temperature : | Not relevant. |
| Decomposition point/decomposition range : | Not relevant. |

9.2. Other information

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This mixture is stable under the recommended handling and storage conditions in section 7.

Refractory product, stable at high temperatures.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :

- accumulation of electrostatic charges.

10.5. Incompatible materials

Keep away from :

- strong acids
- strong bases
- strong oxidising agents

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)



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SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Repeated or prolonged contact with the mixture may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

11.1.1. Substances

Acute toxicity :

ALUMINIUM OXIDE (CAS: 1344-28-1)

Oral route :

LD50 > 2000 mg/kg

Species : Rat

OECD Guideline 401 (Acute Oral Toxicity)

Inhalation route :

LC50 > 2.3 mg/l

Species : Rat

OECD Guideline 403 (Acute Inhalation Toxicity)

11.1.2. Mixture

No toxicological data available for the mixture.

The product has not been tested. The indication is based on the properties of the different components.

Acute toxicity :

negative

Skin corrosion/skin irritation :

Prolonged or repeated exposure may cause skin irritation and dermatitis due to the defatting properties of the product.

Serious damage to eyes/eye irritation :

May cause irritation to eyes due to the presence of a foreign body.

Respiratory or skin sensitisation :

negative

Germ cell mutagenicity :

negative

Carcinogenicity :

negative

Reproductive toxicant :

negative

Specific target organ systemic toxicity - single exposure :

negative

Specific target organ systemic toxicity - repeated exposure :

negative

Aspiration hazard :

Inhalation of high concentrations of these inert nuisance particulates can result in mild irritation of the respiratory tract.

Symptoms related to the physical, chemical and toxicological characteristics

cf section 11.1



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SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

Not harmful to aquatic life.

12.1.1. Substances

ALUMINIUM OXIDE (CAS: 1344-28-1)

Fish toxicity :

LC50 > 100 mg/l
Species : *Salmo trutta*
Duration of exposure : 96 h
OECD Guideline 203 (Fish, Acute Toxicity Test)

Crustacean toxicity :

EC50 > 100 mg/l
Species : *Daphnia magna*
Duration of exposure : 48 h
OECD Guideline 202 (Daphnia sp. Acute Immobilisation Test)

Algae toxicity :

ECr50 > 100 mg/l
Species : *Selenastrum capricornutum*
Duration of exposure : 72 h
OECD Guideline 201 (Alga, Growth Inhibition Test)

12.1.2. Mixtures

No aquatic toxicity data available for the mixture.

The product has not been tested. The indication is based on the properties of the different components.

12.2. Persistence and degradability

Inert mineral product. Not degradable.

12.3. Bioaccumulative potential

Slightly bioaccumulable.

12.4. Mobility in soil

Slightly soluble product, readily forms deposits.

12.5. Results of PBT and vPvB assessment

Complies with annexe XIII of regulation CE 1907/2006 (REACH); not applicable to inorganic substances.

12.6. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

Proper waste management of the mixture and/or its container must be determined in accordance with Directive 2008/98/EC.

Unused material may be incinerated or landfilled in facilities meeting local regulations.

13.1. Waste treatment methods

Do not pour into drains or waterways.



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Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, preferably via a certified collector or company.

Do not contaminate the ground or water with waste, do not dispose of waste into the environment.

The exhausted catalysts may have different risks and properties compared to the original product. This safety data sheet is not applicable to exhausted catalysts.

Soiled packaging :

Empty container completely. Keep label(s) on container.

Empty containers should be taken to local recyclers for disposal. Refer to local regulations.

Codes of wastes (Decision 2001/573/EC, Directive 2006/12/EEC, Directive 94/31/EEC on hazardous waste) :

06 03 16 metallic oxides other than those mentioned in 06 03 15

SECTION 14 : TRANSPORT INFORMATION

Exempt from transport classification and labelling.

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2011 - IMDG 2010 - ICAO/IATA 2011).

SECTION 15 : REGULATORY INFORMATION

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

- Particular provisions :

No data available.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Since the user's working conditions are not known by us, the information supplied on this safety data sheet is based on our current level of knowledge and on national and community regulations.

The mixture must not be used for other uses than those specified in section 1 without having first obtained written handling instructions.

It is at all times the responsibility of the user to take all necessary measures to comply with legal requirements and local regulations.

The information in this safety data sheet must be regarded as a description of the safety requirements relating to the mixture and not as a guarantee of the properties thereof.

Abbreviations :

PNEC : Predicted No-Effect Concentration

ADR : European agreement concerning the international carriage of dangerous goods by Road.

IMDG : International Maritime Dangerous Goods.

IATA : International Air Transport Association.

ICAO : International Civil Aviation Organisation

RID : Regulations concerning the International carriage of Dangerous goods by rail.

WGK : Wassergefährdungsklasse (Water Hazard Class).