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 / PROC 8b / 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 / ERC 10a / 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 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.

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.

No labelling requirements for this mixture.

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

The mixture does not contain any substances classified as 'Substances of Very High Concern' (SVHC) by the European CHemical s Agency

(ECHA) under article 57 of REACH: http://echa.europa.eu/fr/candidate-list-table
The mixture satisfies neither the PBT nor the vPvB criteria for mixtures in accordance with annexe XIII of the REACH regulations EC 1907/2006.
Avoid the formation or spread of dust in the atmosphere.

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

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.

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.

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.

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.

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	-	-	-	-

- Australia (NOHSC: 3008, 1995) :

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	-	-	-	-

- 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

- Canada / Quebec (Regulations on occupational health and safety) :

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

- China (GBZ 2.1, 2007) :

CAS	TWA :	STEL :	Anm :	TWA :	STEL :	Anm :
1344-28-1	4 mg/m3	6 mg/m3	-	-	T	

- Denmark (2007) :

CAS	TWA :	TWA :	Anm :			
1344-28-1	-	5 mg/m3	-			

- 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

- Malaysia :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
1344-28-1	10 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

- 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

Derived no effect level (DNEL) or derived minimum effect level (DMEL):

ALUMINA/BOEHMITE : DNEL : 3000 µg/m3 (in Al2O3)

Predicted no effect concentration (PNEC):

ALUMINIUM OXIDE (CAS: 1344-28-1)

Environmental compartment:	Fresh water.
PNEC :	0.0749 mg/l
Environmental compartment:	Waste water treatment plant.
PNEC :	20 mg/l

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.
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 :
- FFP1

Particle filter according to standard EN143 :
- P1 (White)

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.

10.3. Possibility of hazardous reactions

No data available.

10.4. Conditions to avoid

Avoid :
- formation of dusts

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)

SECTION 11 : TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No data available.

11.1.1. Substances

Acute toxicity :

ALUMINIUM OXIDE (CAS: 1344-28-1)

Oral route :	LD50 > 2000 mg/kg Species : Rat OCDE Ligne directrice 401 (Toxicité aiguë par voie orale)
Inhalation route :	LC50 > 2.3 mg/l Species : Rat OCDE Ligne directrice 403 (Toxicité aiguë par inhalation)

11.1.2. 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 dermatisis 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

Symptoms related to the physical, chemical and toxicological characteristics

no data

SECTION 12 : ECOLOGICAL INFORMATION

12.1. Toxicity

Not harmfull 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 OCDE Ligne directrice 203 (Poisson, essai de toxicité aiguë)
Crustacean toxicity :	EC50 > 100 mg/l Species : Daphnia magna Duration of exposure : 48 h OCDE Ligne directrice 202 (Daphnia sp., essai d'immobilisation immédiate)
Algae toxicity :	ECr50 > 100 mg/l Species : Selenastrum capricornutum Duration of exposure : 72 h OCDE Ligne directrice 201 (Algues, Essai d'inhibition de la croissance)

12.1.2. Mixtures

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.

12.2.1. Substances

ALUMINIUM OXIDE (CAS: 1344-28-1)

Biodegradability : no degradability data is available, the substance is considered as not degrading quickly.

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.

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 2013 - IMDG 2012 - ICAO/IATA 2013).

SECTION 15 : REGULATORY INFORMATION

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

- Classification and labelling information included in section 2:

The following regulations have been used:

- Directive 67/548/EEC and its adaptations
- Directive 1999/45/EC and its adaptations
- Regulation EC 1272/2008 modified by regulation EC 618/2012
- EU Regulation No. 1272/2008 amended by EU Regulation No. 758/2013.

- Container information:

No data available.

- 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 : Wassergefahrdungsklasse (Water Hazard Class).
PROC : Process Category
ERC : Environmental Release Category
PC : Market sector by type of Chemical Product
SU : Sector of end Use