

SAFETY DATA SHEETS (SDS)

1. PRODUCT IDENTIFICATION

PRODUCT NAME: **BUBBLE ALUMINUM**

SYNONYMS: Alodur KKW, KKW SP, KKW-SAC

FORMULA: Al₂O₃ (>99%)

CAS NO. 1344-28-1

RECOMENDED USES: Bubble Alumina has a low bulk density and extremely low thermal conductivity. Due to these properties it is used to form pores in high porosity abrasives and as a media to filtrate aggressive liquids or melts. It can also be used in the firing process of vitrified grinding wheels.

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2. HAZARD IDENTIFICATION

Classification of a Substance or Mixture:

The substance is not classified as hazardous according to the Globally Harmonized System (GHS).

Additional Information:

- Not hazardous as delivered. Long term inhalation of product dusts formed during use is harmful.
- There are no other hazards not otherwise classified that have been identified.
- 0 percent of the mixture consists of ingredient(s) of unknown toxicity.

Label Element:

GHS Label Elements

- The product is NOT classified as hazardous according to OSHA Globally Harmonized System (GHS) regulations within the United States.

Signal Word: NOT REGULATED

Hazard-determining Component of Labeling: None.

Hazard Statements: Not Regulated

Precautionary Statements: Not Regulated

Hazard Description:

WHMIS Symbols: Not hazardous under WHMIS.

Classification System:

NFPA ratings (scale 0 - 4):



Health = 1

Fire = 0

Reactivity = 0

HMIS-Ratings (scale 0 - 4):

HEALTH	*1
FIRE	0
REACTIVITY	0

* Indicates a long term health hazard from repeated or prolonged exposures.

Other Hazards:

· Results of PBT and vPvB Assessment

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Characterization: Substances

CAS No. **Description:** Aluminum Oxide (> 99%) - CAS No. 1344-28-1

4. FIRST-AID MEASURES

Description of First Aid Measures (No special measures required):

- **If Swallowed:** Rinse out mouth and drink plenty of water. Do not induce vomiting; immediately call for medical help.
- **If on Skin:** Brush off loose particles. Wash with soap and water. If skin irritation is experienced, consult a doctor.
- **If in Eyes:** Remove contacts if possible if worn. Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.
- **If Inhaled:** If breathing is difficult - Remove person to fresh air and keep comfortable for breathing.
If experiencing respiratory symptoms or feels unwell - Seek immediate medical attention.

Most important symptoms and effects, both acute and delayed:

- Coughing
- Gastric or intestinal disorders
- Breathing difficulty

Danger:

- Danger of impaired breathing.

Indication of any immediate medical attention and special treatment needed:

- No further relevant information available.

5. FIRE FIGHTING MEASURES

FLASH POINT: Not Applicable

FLAMMABLE LIMITS: **LEL:** Not Applicable **UEL:** Not Applicable

AUTO IGNITION TEMPERATURES: Not Applicable.

EXTINGUISHING MEDIA: Use media appropriate for surrounding fire and that suit the environment.

FIRE AND EXPLOSION HAZARDS: Non-flammable, non-combustible. Product will not burn.

HAZARDOUS DECOMPOSITION PRODUCTS: None

FIRE FIGHTING INSTRUCTIONS: Wear self-containing respiratory protective device. Wear fully protective suit.

NFPA CLASSIFICATION:

HEALTH: 1

FLAMMABILITY: 0

REACTIVITY: 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:

- Use respiratory protective device against the effects of fumes/dust/aerosol.
- For large spills, wear protective clothing.
- Avoid formation of dust.
- Ensure adequate ventilation.

Environmental precautions: No special measures required.

Methods and material for containment and cleaning up:

- Dispose contaminated material as waste according to item 13.
- Send for recovery or disposal in suitable receptacles

Reference to other sections:

- See Section 7 for information on safe handling.
- See Section 8 for information on personal protection equipment.
- See Section 13 for disposal information.

7. HANDLING AND STORAGE

HANDLING:

Precautions for safe handling:

- Prevent formation of dust.
- Any deposit of dust which cannot be avoided must be regularly removed.
- Use only in well ventilated areas.
- Avoid breathing dust.
- Do not dry clean dust covered objects and floors. Wash thoroughly with plenty of water.

Information about protection against explosions and fires: No special measures required.

Conditions for safe storage, including any incompatibilities:

Storage:

Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility:

- Store away from oxidizing agents.
- Store away from foodstuffs.

Further information about storage conditions:

- Store in cool, dry conditions in well-sealed receptacles.
- Store receptacle in a well ventilated area.
- Protect from humidity and water.
- This product is hygroscopic.

Specific end use(s) No further relevant information available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Additional information about design technical facilities: No further data – see section 7.

CONTROL PARAMETERS:

Ingredients with Limit Values That Require Monitoring at the Workplace:

Aluminum Oxide (Cas# 1344-28-1):

PEL (USA)	Long-term value: 15*; 15** mg/m ³ *Total dust; ** Respirable fraction
REL (USA)	Long-term value: 10* 5** mg/m ³ as Al*Total dust**Respirable/pyro powd./welding f.
TLV (USA)	Long-term value: 1* mg/m ³ as Al; *as respirable fraction
EL (Canada)	Long-term value: 1.0 mg/m ³ respirable, as Al
EV (Canada)	Long-term value: 10 mg/m ³ total dust
LMPE (Mexico)	Long-term value: 1* mg/m ³ A4, *fraccion respirable

Additional information: The lists that were valid during the creation were used as basis.

EXPOSURE CONTROLS:

Personal Protective Equipment (PPE):

General Protective and Hygienic measures:

- The usual precautionary measures for handling chemicals should be followed.
- Keep away from foodstuffs, beverages and feed.
- Wash hands before breaks and at the end of work.
- Avoid contact with the eyes.
- Avoid close or long term contact with the skin.
- Do not inhale dust / smoke / mist.

Engineering controls: No further relevant information available.

Breathing equipment:

- Use suitable respiratory protective device in case of insufficient ventilation.
- For spills, respiratory protection may be advisable.

Protection of hands:

- Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules.
- Gloves are advised for repeated or prolonged contact.
- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Material of gloves

- The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

Eye protection:

- Safety glasses or goggles to prevent dust and particles from entering the eye.

Body protection:

- Not required under normal conditions of use.
- Protection may be required for spills.

Limitation and supervision of exposure into the environment:

- No special requirements.

Risk management measures:

- No special requirements (see section 7 for additional information.).

9. PHYSICAL AND CHEMICAL PROPERTIES
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Information on basic physical and chemical properties:**GENERAL INFORMATION:**

- **Appearance:**
 - **Form:** Granulate
 - **Color:** White hollow spheres
- **Odor:** Odorless
- **Odor threshold:** Not determined.
- **pH-value:** Slightly alkaline
- **Change in condition**
 - **Melting point/Melting range:** 2100 °C (3812 °F)
 - **Boiling point/Boiling range:** Undetermined.
- **Flash point:** Not applicable.
- **Flammability (solid, gaseous):** Product is not flammable.
- **Auto-ignition temperature:** Not determined.
- **Decomposition temperature:** Not determined.
- **Auto igniting:** Not determined.
- **Danger of explosion:** Product does not present an explosion hazard.
- **Explosion limits:**
 - **Lower:** Not determined.
 - **Upper:** Not determined.
- **Vapor pressure:** Not applicable.
- **Density at 20 °C (68 °F):** 3.95 g/cm³ (32.963 lbs./gal)
- **Relative density** Not determined.
- **Vapor density** Not applicable.
- **Evaporation rate** Not applicable.
- **Solubility in / Miscibility with**
 - **Water:** Insoluble.
- **Partition coefficient (n-octanol/water):** Not determined.
- **Viscosity:**
 - **Dynamic:** Not applicable.
 - **Kinematic:** Not applicable.
- **Formula** Al₂O₃

OTHER INFORMATION: No further relevant information available.

10. STABILITY AND REACTIVITY

Reactivity:

Chemical Stability:

- **Thermal decomposition / conditions to be avoided:** No decomposition if used and stored according to specifications.

Possibility of hazardous reactions:

- Reacts with strong acids.
- Reacts with oxidizing agents.
- Reacts with strong alkali.

Conditions to avoid: No further relevant information available.

Incompatible materials: No further relevant information available.

Hazardous decomposition products: Toxic metal oxide smoke

11. TOXICOLOGICAL INFORMATION

INFORMATION ON TOXICOLOGICAL EFFECTS:

Acute toxicity:

LD/LC50 values that are relevant for classification: None.

Primary irritant effect:

- **On the skin:** Slight irritant effect on skin and mucous membranes.
- **On the eye:** Slight irritant effect on eyes.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity: Suspected of causing cancer via inhalation.

Additional Toxicological Information:

Carcinogenic Categories

NTP (National Toxicology Program): Substance is not listed.

OSHA-Ca (Occupational Safety & Health Administration): Substance is not listed.

Probable Routes of Exposure:

- Ingestion.
- Inhalation.
- Eye contact.
- Skin contact.

Acute effects (acute toxicity, irritation and corrosively): From product as supplied: None.

Repeated Dose Toxicity:

- Repeated or long-term inhalation of product dusts may cause pulmonary disease.

12. ECOLOGICAL INFORMATION

TOXICITY:

- **Aquatic Toxicity:** Generally not hazardous for water.
- **Persistence & Degradability:** Inorganic, is not eliminable from water by means of biological cleaning processes.

BEHAVIOR IN ENVIRONMENTAL SYSTEM:

- **Bio accumulative Potential:** Does not accumulate in organisms.
- **Mobility In Soil:** No further relevant information available
- **Other Adverse Effects:** No further relevant information available

13. DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

Recommendation:

- Smaller quantities can be disposed of with household waste.
- Can be reused after reprocessing.
- Contact waste processors for recycling information.
- The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes. Residual materials should be treated as hazardous.

Uncleaned Packaging:

Recommendation:

- Disposal must be made according to official regulations.

14. TRANSPORT INFORMATION

UN-Number

DOT, ADR, ADN, IMDG, IATA: Not Regulated
UN proper shipping name

DOT, ADR, ADN, IMDG, IATA: Not Regulated
Transport hazard class(s)

DOT, ADR, ADN, IMDG, IATA: Not Regulated
Class

Packing group
DOT, ADR, IMDG, IATA: Not Regulated

Environmental hazards:
Marine pollutant: No

Special precautions for user: Not applicable.

Transport in bulk according to Annex II of
MARPOL73/78 and the IBC Code: Not applicable.

UN "Model Regulation": -

15. REGULATORY INFORMATION

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

United States (USA)

SARA

- **Section 355 (extremely hazardous substances):** Substance is not listed.
- **Section 313 (Specific toxic chemical listings):** Substance is not listed.
- **TSCA (Toxic Substances Control Act):** Substance is listed.

Proposition 65 (California):

- **Chemicals known to cause cancer:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for females:** Substance is not listed.
- **Chemicals known to cause reproductive toxicity for males:** Substance is not listed.
- **Chemicals known to cause developmental toxicity:** Substance is not listed.

Carcinogenic Categories:

- **EPA (Environmental Protection Agency):** Substance is not listed.
- **IARC (International Agency for Research on Cancer):** Substance is not listed
- **TLV (Threshold Limit Value established by ACGIH):** 1344-28-1 aluminum oxide (A4)
- **NIOSH-Ca (National Institute for Occupational Safety and Health):** Substance is not listed
- **State Right to Know Listings:** Substance is not listed.

Canadian substance listings:

- **Canadian Domestic Substances List (DSL):** Substance is listed.
- **Canadian Ingredient Disclosure list (limit 0.1%):** Substance is not listed.
- **Canadian Ingredient Disclosure list (limit 1%):** Substance is not listed

Other regulations, limitations and prohibitive regulations

- This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16. OTHER INFORMATION & LAST REVISION DATE

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Abbreviation and acronyms:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS	Chemical Abstracts Service
DOT	Department of Transportation
IARC	International Agency for Research on Cancer
IMDG	International Maritime Dangerous Goods
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit

SARA	Superfund Amendment and Reauthorization Act
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act

NOTICE:

This material safety data sheet complements the technical data sheets but does not replace them. The information it contains is based on our present knowledge of the product on the date indicated. It is given in good faith. Users should be warned about the risks associated with using the product for a different purpose than that for which it was developed, and particularly for uses for which we are not qualified to give advice.

These regulatory prescriptions are provided with a view to helping users meet their obligations when using this product. This list should not be considered exhaustive and does not exempt users from ensuring that they are not required to comply with any further prescriptions other than those mentioned above concerning product possession and handling for which they are solely responsible.

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LAST REVISION DATE: 08-01-17