

1: IDENTIFICATION OF THE PREPARATION AND COMPANY

Product Name: **Adbond Artcast**

Application: **The product is specifically prepared for use as a binder in the precision investment casting process.**

Supplier : Remet UK Ltd.
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2: COMPOSITION/INFORMATION ON INGREDIENTS

Composition – An aqueous colloidal silica suspension, prepared from amorphous silicon dioxide and additives.

Ingredient	EINECS No.	CAS No.	Weight/%	Symbol	Risk Phases
Amorphous silica	231-545-4	7631-86-9	26%		

Refer to Section 8 for exposure limits/standards.

3: HAZARDS IDENTIFICATION

Risk Phrases: None

Safety phrases None

Potential Health Effects:

EYES: The product is alkaline and will cause irritation to the eyes.

SKIN: Prolonged exposure will result in skin irritation/sensitisation.

INHALATION: In the dried form the product dust may cause respiratory tract irritation/sensitisation.

INGESTION: Unlikely.

Not classified as Hazardous for Supply according to the Dangerous Preparations Directive (1999/45/EC) and the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002.

4: FIRST AID MEASURES

EYES: Rinse opened eye for at least 15 minutes under clean running water. Obtain medical attention if soreness or redness persists.

SKIN: Wash with water and soap and rinse thoroughly. Remove contaminated clothing and wash or dry clean before reuse. If redness or irritation develops seek medical advice.

INHALATION: Remove from exposure. If there is irritation or cough or patient feels unwell, keep warm and at rest, seek medical attention.

If there is difficulty in breathing give oxygen. If breathing stops or shows signs of failing give artificial respiration. If heart beat absent give external cardiac massage. Seek medical attention urgently.

INGESTION: Wash out mouth with water. Keep warm and at rest. Do NOT induce vomiting.

ADVICE TO PHYSICIANS: Product is alkaline, approximately pH 9.9. Immediate specialist medical attention is recommended.

5: FIRE-FIGHTING MEASURES

This material has no fire or explosion hazard. The product is not combustible

SUITABLE EXTINGUISHING MEDIA: Use fire extinguishing methods suitable to surrounding conditions.

SPECIAL EXPOSURE HAZARDS: Carbon monoxide, carbon dioxide, hydrogencyanide, oxides of nitrogen and small amounts of aromatic or aliphatic hydrocarbons can be generated from combustion of dry or cured product. Dried material will release amorphous silica powder if disturbed.

SPECIAL PROTECTIVE EQUIPMENT: Self-contained breathing apparatus operated in positive pressure mode, to avoid respiration of amorphous silica powder.

6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Avoid unnecessary contact and exposure. Wear suitable protective clothing including boots, as spillage is likely to be slippery.

ENVIRONMENTAL PRECAUTIONS: Prevent entry into drains, sewers and water courses. Prevent from entering ground water.

DECONTAMINATION PROCEDURES: Large spillages should be contained and pumped into suitable containers for disposal. Small spillages should be absorbed with liquid binding material (sand, diatomite, acid binders, universal binders, sawdust) disposed of. Refer to Section 13 for disposal information.

7: HANDLING AND STORAGE

7.1 HANDLING:
The product should be handled in accordance with good industrial safety and hygiene practices. Small levels of volatile compounds may accumulate in the head space of containers which should be opened in ventilated surroundings. Avoid the generation of respirable particles from spray mist or dust. Avoid contact with skin, eyes and clothing.

7.2 STORAGE:
Protect from frost. Sealed containers should be stored between 5°C and 25°C. Freezing temperatures can cause irreversible precipitation of the silica, therefore the product should be located in heated buildings. Bulk tanks should be externally vented. Keep containers tightly closed. Store away from foodstuffs.

8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 MAXIMUM/OCCUPATIONAL EXPOSURE LIMITS –

Substance	8 hr. TWA	STEL	Source/Other information
Silica, amorphous (CAS No. 7631-86-9)	These figure have been extracted from EH40/2002 Occupational Exposure Limits 2002. The latest relevant limits should be observed.		
- total inhalable dust	6.0mg.m ⁻³	-	EH40/2002; Occupational Exposure Standard Table 2
- respirable dust	2.4mg.m ⁻³	-	EH40/2002; Occupational Exposure Standard Table 2

8.2 ENGINEERING CONTROL MEASURES:

Avoid the generation of respirable particles from spray mist or dust. Avoid contact with skin, eyes and clothing. Good general ventilation is normally adequate. **Mechanical methods to minimise exposure must take precedence over personnel protective measures.**

8.3 PERSONAL PROTECTIVE EQUIPMENT:

- Hand Protection: Wear impermeable gloves (e.g. PVC or rubber). The gloves should conform to the following:
Material of gloves (EN 388) - minimum requirements for efficiency level 1 for all groups.
Penetration time of glove material (EN 420) - minimum requirements for efficiency level 1 for all groups.
- Eye protection: If conditions exist where contact with the eyes is likely then, goggles or safety glasses appropriate to the task should be worn.
- Skin Protection: Protective overalls. Wear suitable waterproof overalls if severe splashing is likely to occur. Change contaminated clothing and launder before re-use. Use of the basic principles of good Industrial Hygiene will enable this material to be used safely. When using do Not eat, drink or smoke. Wash hands after use.
- Protection during use: During application, adequate local exhaust ventilation must be provided to ensure occupational exposure standards are observed.
- Respiratory Protection: When engineering control measures (e.g. local exhaust ventilation) need to be supplemented by the wearing of a respiratory device (Filter P2) this must be of a standard approved by the Health and Safety Executive.

8.4 ENVIRONMENTAL EXPOSURE CONTROLS:

Do not allow product to reach sewage system, groundwater and any water course. Dispose of used packaging and product according to current waste legislation.

9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White liquid	Flammability:	N/A
Odour:	None	Vapour Pressure at 25°C:	32 hPa
pH:	9.9	Water Solubility:	Fully Miscible
Boiling Point:	Approx. 100°C (as water)	Specific Gravity @ 25°C	1.21 - 1.22

10: STABILITY AND REACTIVITY

- Stability: Reducing the pH of this product will generate very small quantities of formaldehyde. Under normal conditions of use, this product will generate small quantities of formaldehyde under curing conditions. Substances coated can emit formaldehyde until the product is fully reacted. Product is stable under recommended storage conditions. It is recommended the product is used within six months of purchase.
- Materials to avoid: Addition of certain chemicals including ionic salts will promote coagulation. Strong oxidising agents.
- Decomposition Products: None.
- Hazardous Polymerisation: Will not occur.

11: TOXICOLOGICAL INFORMATION

Acute toxicity:

LD/LC50 values relevant for classification:		
7631-86-9 amorphous silicon dioxide, chemically prepared		
Oral	LD50	10000mg/kg (rat)
Dermal	LD50	>5000mg/kg (rabbit) OECD 402
Inhalative	LC50	0.139mg/l/14h (rat)

11: TOXICOLOGICAL INFORMATION continued....**Primary irritant effect:**

- on skin: Irritant to skin and mucous membranes
- on the eye: Irritating effect.

Sensitisation: No sensitising effects known.

Subacute to chronic toxicity:

Amorphous silicon dioxide, chemically prepared:

No negative effects were determined during tests for chronic oral toxicity, carcinogenicity, teratogenicity and fertility. No irreversible changes and no symptoms of silicosis were determined during tests for chronic inhalative toxicity.

Additional toxicological information:

When used and handled according to specifications, the product does not have any harmful effects from our experience and the information provided to us.

12: ECOLOGICAL INFORMATION

ENVIRONMENTAL ASSESSMENT: When used and disposed of as intended, no adverse environmental effects are foreseen.

MOBILITY: Material is miscible and will rapidly disperse in water.

PERSISTENCE AND DEGRADABILITY: Not determined.

BIOACCUMULATIVE POTENTIAL: Not determined

ECOTOXICITY: Not determined.

AQUATIC TOXICITY:**Fish toxicity****7631-86-9 amorphous silicon dioxide, chemically prepared**

LC50 (96 h)	> 10000mg/l (Brachydanio rerio) OECD 202
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Water flea toxicity**7631-86-9 amorphous silicon dioxide, chemically prepared**

EC50 (24 h)	> 1000 mg/l (Daphnia magna) OECD 202
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13: DISPOSAL CONSIDERATION

Disposal must be in accordance with local and national legislation.

UNUSED PRODUCT: Dispose of through a licensed contractor to a licensed site.

USED PRODUCT: Dispose of through a licensed contractor to a licensed site.

PACKAGING. Containers should be cleaned by appropriate methods and then re-used or disposed of by landfill or incineration as appropriate.

14: TRANSPORT INFORMATION

The product is NOT classified as Hazardous for Transport. No special precautions are required.

15: REGULATORY INFORMATION

NOT classified as Hazardous for Supply according to the Dangerous Preparations Directive (1999/45/EC) and the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002.

16: OTHER INFORMATION

Sources of key data:

Guidance Note EH40 Occupational Exposure Limits.

Control of Substances Hazardous to Health Regulations.

Chemicals (Hazard Information and Packaging) Regulations (CHIP3).

Raw material suppliers MSDS's.

The information provided in this Safety Data Sheet has been compiled in accordance with the Dangerous Substances Directive (67/548/EEC) as amended by the Seventh Amendment (92/32/EEC), Article 15 of the Dangerous Preparations Directive (1999/45/EC), the Safety Data Sheet Directive (91/155/EEC, as amended by Directives 93/112/EC and 2001/58/EC) and the Chemicals (Hazard Information and Packaging for Supply) Regulations 2002 and is based on the present state of our knowledge.

This data is intended to enable safety assessments to be made and should not be construed as guaranteeing specific properties. Users are recommended to consult technical information sheets for advice on specific applications.

The data and advice given apply when the product is sold for the stated application or applications. The product is not sold as suitable for any other application. Use of the product for applications other than as stated in this sheet may give rise to risks not mentioned in this sheet. You should not use the product other than for the stated application or applications without seeking advice from us.

If you have purchased the product for supply to a third party for use at work, it is your duty to take all necessary steps to ensure that any person handling or using the product is provided with the information on this sheet.

If you are an employer, it is your duty to tell your employees, and others who may be affected, of any hazards described in this sheet and of any precautions which should be taken.

Further copies of this Material Safety Data Sheet may be obtained from Remet UK Ltd.

Changes since last revision: contact details amended to reflect relocation.