

**SAFETY DATA SHEET**  
according to 1907/2006/EC, Article 31

Page 1/7

**Astro-Vest (TM) investment [NA]**Revision 1  
Revision date 2015-06-10**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

Product name	Astro-Vest (TM) investment [NA]
Product code	Astro-Vest investment 061015 R002

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

Description	Foundry material.
-------------	-------------------

**1.3. Details of the supplier of the safety data sheet**

Company	Ransom & Randolph
Address	3535 Briarfield Boulevard, Maumee, OH 43537 USA
Web	www.ransom-randolph.com
Telephone	+1 (419) 865-9497
Fax	+1 (419) 865-9997
Email	RR.SDS@dentsply.com
Email address of the competent person	RR.SDS@dentsply.com

**1.4. Emergency telephone number**

Emergency telephone number	USA +1 419 865 9497
Company	Ransom & Randolph Co. 07:30 to 16:30 (Eastern Std. / GMT minus 5)

**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture**

2.1.1. Classification - 1999/45/EC	Xn; R48/20 Symbols: Xn: Harmful.
Main hazards	Harmful: danger of serious damage to health by prolonged exposure through inhalation.
2.1.2. Classification - EC 1272/2008	Carc. 1A: H350; STOT RE 1: H372;

**2.2. Label elements**

Hazard pictograms	
Signal Word	Danger
Hazard Statement	Carc. 1A: H350 - May cause cancer inhalation. STOT RE 1: H372 - Causes damage to organs (lungs) through prolonged or repeated exposure inhalation.
Precautionary Statement: Prevention	P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood.

## Astro-Vest (TM) investment [NA]

Revision 1  
Revision date 2015-06-10

## 2.2. Label elements

<b>Precautionary Statement: Response</b>  <b>Precautionary Statement: Storage</b>  <b>Precautionary Statement: Disposal</b>	P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P264 - Wash thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P285 - In case of inadequate ventilation wear respiratory protection.
	P308+P313 - IF exposed or concerned: Get medical advice/attention. P314 - Get medical advice/attention if you feel unwell.
	P405 - Store locked up.
	P501 - Dispose of contents/container to local and national regulations

## 2.3. Other hazards

<b>Other hazards</b>	Product contains crystalline silica.
----------------------	--------------------------------------

## Further information

	Not applicable. PBT and vPvB assessment.
--	--

## SECTION 3: Composition/information on ingredients

## 3.2. Mixtures

## 67/548/EEC / 1999/45/EC

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
quartz (conc. >= 1.0%)		14808-60-7	238-878-4		40 - 70%	Xn; R48/20	
phosphate binder (proprietary)					0 - 5%	Xi; R36/38	
phosphate binder 2 (proprietary)					0 - 5%	Xi; R36/38	
silica (cristobalite conc. >= 1.0%)		14464-46-1	238-455-4		20 - 40%	Xn; R48/20	
Magnesium Oxide		01309-48-4	215-171-9		0 - 5%	Xn; R20 Xi; R37/38	

## EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
quartz (conc. >= 1.0%)		14808-60-7	238-878-4		40 - 70%	Carc. 1A: H350; STOT RE 1: H372;	
phosphate binder (proprietary)					0 - 5%	Skin Irrit. 2: H315; Eye Irrit. 2: H319;	
phosphate binder 2 (proprietary)					0 - 5%	Skin Irrit. 2: H315; Eye Irrit. 2: H319;	
silica (cristobalite conc. >= 1.0%)		14464-46-1	238-455-4		20 - 40%	Carc. 1A: H350; STOT RE 1: H372;	
Magnesium Oxide		01309-48-4	215-171-9		0 - 5%		

## Further information

	Full text for all Risk Phrases mentioned in this section are displayed in Section 16.
--	---

## SECTION 4: First aid measures

## 4.1. Description of first aid measures

<b>Inhalation</b>	Move the exposed person to fresh air.
<b>Eye contact</b>	Rinse immediately with plenty of water for 15 minutes holding the eyelids open.
<b>Skin contact</b>	Wash with soap and water.
<b>Ingestion</b>	Drink 1 to 2 glasses of water. DO NOT INDUCE VOMITING.

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

<b>Inhalation</b>	May cause irritation to respiratory system.
-------------------	---

## Astro-Vest (TM) investment [NA]

Revision 1  
Revision date 2015-06-10**4.2. Most important symptoms and effects, both acute and delayed**

Eye contact	May cause irritation to eyes.
Skin contact	May cause irritation to skin.
Ingestion	May cause irritation to mucous membranes.

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

Inhalation	Seek medical attention if irritation or symptoms persist.
Eye contact	Seek medical attention if irritation or symptoms persist.
Skin contact	Seek medical attention if irritation or symptoms persist.
Ingestion	Seek medical attention if irritation or symptoms persist.

**SECTION 5: Firefighting measures****5.1. Extinguishing media**

	Use extinguishing media appropriate to the surrounding fire conditions.
--	---

**5.2. Special hazards arising from the substance or mixture**

	Burning produces irritating, toxic and obnoxious fumes.
--	---

**5.3. Advice for firefighters**

	Self-contained breathing apparatus. Wear suitable protective clothing.
--	--

**SECTION 6: Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

	Avoid raising dust. Wear suitable respiratory equipment when necessary.
--	---

**6.2. Environmental precautions**

	No environmental requirements.
--	--------------------------------

**6.3. Methods and material for containment and cleaning up**

	Avoid raising dust. Clean the area using a vacuum cleaner. Transfer to suitable, labelled containers for disposal.
--	--

**6.4. Reference to other sections**

	See section [2, 8 & 13] for further information.
--	--

**SECTION 7: Handling and storage****7.1. Precautions for safe handling**

	Avoid raising dust. Ensure adequate ventilation of the working area. In case of insufficient ventilation, wear suitable respiratory equipment.
	Do not eat, drink or smoke in areas where this product is used or stored. Wash hands after handling the product.

**7.2. Conditions for safe storage, including any incompatibilities**

	Keep containers tightly closed.
--	---------------------------------

**7.3. Specific end use(s)**

	Foundry material.
--	-------------------

**SECTION 8: Exposure controls/personal protection****8.1. Control parameters**

	exposure limits - Crystalline Silica, Cristobalite - 0.025 mg/m <sup>3</sup> TWA ACGIH TLV (respirable fraction); 10 mg/m <sup>3</sup> / [ 2(% Silica + 2)] TWA PEL (respirable fraction).
	exposure limits - Crystalline Silica, quartz - 0.025 mg/m <sup>3</sup> TWA ACGIH TLV (respirable fraction); 10 mg/m <sup>3</sup> / (% Silica + 2) TWA PEL (respirable fraction).

## Astro-Vest (TM) investment [NA]

Revision 1

Revision date 2015-06-10

## 8.2. Exposure controls

8.2.1. Appropriate engineering controls	Ensure adequate ventilation of the working area.
8.2.2. Individual protection measures	Protective clothing.
Eye / face protection	In case of splashing, wear:.. Approved safety goggles. safety glasses with side-shields.
Skin protection - Handprotection	Wear suitable gloves.
Respiratory protection	Suitable respiratory equipment.
8.2.3. Environmental exposure controls	Not normally required.
Occupational exposure controls	Appropriate local exhaust ventilation is required.

## SECTION 9: Physical and chemical properties

## 9.1. Information on basic physical and chemical properties

Appearance	Powder
Colour	Off white
Odour	Slight
Odour threshold	Not applicable.
pH	6 - 8
Melting point	No data available
Freezing Point	Not applicable.
Initial boiling point	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Not applicable.
Vapour pressure	Not applicable.
Vapour density	Not applicable.
Relative density	2.6 (H <sub>2</sub> O = 1 @ 20 °C)
Fat Solubility	Not applicable.
Partition coefficient	No data available
Autoignition temperature	Not applicable.
Viscosity	Not applicable.
Explosive properties	Not applicable.
Oxidising properties	Not applicable.
Solubility	Slightly soluble in water

## 9.2. Other information

Benzene Content	Not applicable.
Lead content	Not applicable.
VOC (Volatile organic compounds)	Not applicable.
Conductivity	No data available
Surface tension	Not applicable.
Gas group	Not applicable.

## SECTION 10: Stability and reactivity

## 10.1. Reactivity

	Not applicable.
--	-----------------

## 10.2. Chemical stability

	Stable under normal conditions.
--	---------------------------------

## Astro-Vest (TM) investment [NA]

Revision 1

Revision date 2015-06-10

**10.3. Possibility of hazardous reactions**

No Significant Hazard.

**10.4. Conditions to avoid**

Moisture.

**10.5. Incompatible materials**

No Significant Hazard.

**10.6. Hazardous decomposition products**

Hazardous Decomposition Products (silica): Crystalline silica will dissolve in hydrofluoric acid and produce silicone tetrafluoride. Reaction with water or acids generates heat.

**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

<b>Acute toxicity</b>	Based on available data, the classification criteria are not met.
<b>Skin corrosion/irritation</b>	Prolonged or repeated exposure may cause irritation to skin and mucous membranes.
<b>Serious eye damage/irritation</b>	No irritation expected.
<b>Respiratory or skin sensitisation</b>	No sensitization effects reported.
<b>Germ cell mutagenicity</b>	No mutagenic effects reported.
<b>Carcinogenicity</b>	Known Human Carcinogens (Category 1).
<b>Reproductive toxicity</b>	No observed effect level. No observed effect concentration.
<b>STOT-single exposure</b>	No known adverse health effects.
<b>STOT-repeated exposure</b>	<p>Chronic effects</p> <p>Prolonged inhalation of respirable crystalline silica</p> <p>In 1997, the International Agency for Research on Cancer (IARC) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However it pointed out that not all industrial circumstances, nor all crystalline silica types, were to be incriminated. (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibers, 1997, Vol. 68, IARC, Lyon, France). In June 2003, the European Commission's Scientific Committee for Occupational Exposure Limits (SCOEL) concluded:</p> <p>"that the main effect in humans of the inhalation of respirable crystalline silica is silicosis. There is sufficient information to conclude that the relative lung cancer risk is increased in persons with silicosis (and apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk. Since a clear threshold for silicosis development cannot be identified, any reduction of exposure will reduce the risk of silicosis."</p> <p>(SCOEL SUM Doc 94-final on respirable crystalline silica, June 2003)</p> <p>There is a body of evidence supporting the fact that increased cancer risk would be limited to people already suffering from silicosis. Worker protection against silicosis should be assured by respecting the existing regulatory occupational exposure limits and implementing additional risk management measures where required (see Section 16).</p>
<b>Aspiration hazard</b>	No Significant Hazard.
<b>Repeated or prolonged exposure</b>	Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system.

**SECTION 12: Ecological information****12.2. Persistence and degradability**

No data is available on this product.

**12.3. Bioaccumulative potential**

## Astro-Vest (TM) investment [NA]

Revision 1  
Revision date 2015-06-10

## 12.3. Bioaccumulative potential

Does not bioaccumulate.

## Partition coefficient

Astro-Vest (TM) investment No data available  
[NA]

## 12.4. Mobility in soil

Not determined.

## 12.5. Results of PBT and vPvB assessment

Not determined.

## 12.6. Other adverse effects

Not applicable.

**SECTION 13: Disposal considerations**

## 13.1. Waste treatment methods

Dispose of in compliance with all. local and national regulations.

## Disposal methods

Contact a licensed waste disposal company.

## Disposal of packaging

Empty containers can be sent for disposal or recycling.

**SECTION 14: Transport information**

## 14.1. UN number

The product is not classified as dangerous for carriage.

## 14.2. UN proper shipping name

The product is not classified as dangerous for carriage.

## 14.3. Transport hazard class(es)

The product is not classified as dangerous for carriage.

## 14.4. Packing group

The product is not classified as dangerous for carriage.

## 14.5. Environmental hazards

The product is not classified as dangerous for carriage.

## 14.6. Special precautions for user

The product is not classified as dangerous for carriage.

## 14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

The product is not classified as dangerous for carriage.

## Further information

The product is not classified as dangerous for carriage.

**SECTION 15: Regulatory information**

## 15.2. Chemical safety assessment

No data is available on this product.

**SECTION 16: Other information**

## Other information

## Astro-Vest (TM) investment [NA]

Revision 1

Revision date 2015-06-10

## Other information

<b>Revision</b>	This document differs from the previous version in the following areas:. 2 - 2.1.2. Classification - EC 1272/2008. 2 - Hazard pictograms. 2 - Signal Word. 2 - Hazard Statement. 2 - Precautionary Statement: Prevention. 2 - Precautionary Statement: Response. 2 - Precautionary Statement: Storage. 2 - Precautionary Statement: Disposal. 8 - 8.1. Control parameters.
<b>Text of risk phrases in Section 3</b>	R20 - Harmful by inhalation. R36/38 - Irritating to eyes and skin. R37/38 - Irritating to respiratory system and skin. R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
<b>Text of Hazard Statements in Section 3</b>	Carc. 1A: H350 - May cause cancer . STOT RE 1: H372 - Causes damage to organs through prolonged or repeated exposure . Skin Irrit. 2: H315 - Causes skin irritation. Eye Irrit. 2: H319 - Causes serious eye irritation.

## Further information

	<p>Training Workers must be informed of the presence of crystalline silica and trained in the proper use and handling of this product as required under applicable regulations.</p> <p>The information supplied in this Safety Data Sheet is designed only as guidance for the safe use, storage and handling of the product. This information is correct to the best of our knowledge and belief at the date of publication however no guarantee is made to its accuracy. This 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 other process.</p>
--	---