



# SAFETY DATA SHEET

according to 1907/2006/EC, Article 31

Page 1/8

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

### SECTION 1: Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name	50/50™ Core Mix
--------------	-----------------

#### 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; R42/43-48/20 Xi; R36 Symbols: Xn: Harmful.
Main hazards	Irritating to eyes. May cause sensitisation by inhalation and skin contact. Harmful: danger of serious damage to health by prolonged exposure through inhalation.
2.1.2. Classification - EC 1272/2008	STOT RE 1: H372;

#### 2.2. Label elements

Hazard pictograms	
Signal Word	Danger
Hazard Statement	STOT RE 1: H372 - Causes damage to organs (lungs) through prolonged or repeated exposure

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

## 2.2. Label elements

Precautionary Statement: Prevention	inhalation.
	P260 - Do not breathe dust/fume/gas/mist/vapours/spray. P264 - Wash (hands) thoroughly after handling. P270 - Do not eat, drink or smoke when using this product.
	P314 - Get medical advice/attention if you feel unwell.
Precautionary Statement: Response	
Precautionary Statement: Disposal	P501 - Dispose of contents/container to local and national regulations

## 2.3. Other hazards

Other hazards	Zircon contains trace amounts of naturally occurring uranium, thorium, and radium.  Product contains respirable crystalline silica (RCS).
---------------	---

## 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.
silica, vitreous (Silica, fused respirable dust)		60676-86-0	262-373-8		10 - 20%		
zirconium silicate		14940-68-2			50 - 60%	Xn; R42/43 Xi; R36	
silica (cristobalite) more than 10 %		14464-46-1	238-455-4		10 - 20%	Xn; R48/20	
Magnesium Oxide		01309-48-4	215-171-9		1 - 10%	Xn; R20 Xi; R37/38	
Quartz		14808-60-7	238-878-4		0 - 0.5%	Xn; R48/20	

## EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification	M-factor.
silica, vitreous (Silica, fused respirable dust)		60676-86-0	262-373-8		10 - 20%		
zirconium silicate		14940-68-2			50 - 60%		
silica (cristobalite) more than 10 %		14464-46-1	238-455-4		10 - 20%	STOT RE 1: H372;	

## Further information

	Full text for all Risk Phrases mentioned in this section are displayed in Section 16.  Silica (Cristobalite) "fine fraction" >= 10 % w/w / CAS 14464-46-1, EC No 238-455-4 / STOT RE1: H372.
--	--

## SECTION 4: First aid measures

## 4.1. Description of first aid measures

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

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28**4.2. Most important symptoms and effects, both acute and delayed**

Inhalation	May cause irritation to respiratory system.
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 formation of 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 container.
--	--

**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**

	Ensure adequate ventilation of the working area. Avoid formation of dust. 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**

--	--

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

## 8.1. Control parameters

	<p>Ensure adequate ventilation of the working area.</p> <p>exposure limits - Zirconium silicate 10 mg/m3 STEL ACGIH (respirable fraction) 5 mg/m3 TWA OSHA PEL (respirable fraction).</p>
--	---

## 8.1.1. Exposure Limit Values

Quartz	<p>WEL 8-hr limit ppm: -</p> <p>WEL 15 min limit ppm: -</p> <p>WEL 8-hr limit mg/m3 total - inhalable dust: -</p> <p>WEL 8-hr limit mg/m3 total - respirable dust: -</p>	<p>WEL 8-hr limit mg/m3: 0.3</p> <p>WEL 15 min limit mg/m3: -</p> <p>WEL 15 min limit mg/m3 total - inhalable dust: -</p> <p>WEL 15 min limit mg/m3 total - respirable dust: -</p>
silica, vitreous (Silica, fused respirable dust)	<p>WEL 8-hr limit ppm: -</p> <p>WEL 15 min limit ppm: -</p> <p>WEL 8-hr limit mg/m3 total - inhalable dust: -</p> <p>WEL 8-hr limit mg/m3 total - respirable dust: -</p>	<p>WEL 8-hr limit mg/m3: 0.08</p> <p>WEL 15 min limit mg/m3: -</p> <p>WEL 15 min limit mg/m3 total - inhalable dust: -</p> <p>WEL 15 min limit mg/m3 total - respirable dust: -</p>

## 8.2. Exposure controls

8.2.1. Appropriate engineering controls	Ensure adequate ventilation of the working area.
8.2.2. Individual protection measures	Wear 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

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

## 9.1. Information on basic physical and chemical properties

<b>Appearance</b>	Powder
<b>Colour</b>	Off white
<b>Odour</b>	Slight
<b>pH</b>	4 - 7
<b>Melting point</b>	No data available
<b>Freezing Point</b>	Not applicable.
<b>Initial boiling point</b>	Not applicable.
<b>Flash point</b>	Not applicable.
<b>Evaporation rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Vapour pressure</b>	Not applicable.
<b>Vapour density</b>	Not applicable.
<b>Relative density</b>	3.6 (H <sub>2</sub> O = 1 @ 20 °C)
<b>Fat Solubility</b>	Not applicable.
<b>Partition coefficient</b>	No data available
<b>Autoignition temperature</b>	Not applicable.
<b>Viscosity</b>	No data available
<b>Explosive properties</b>	Not applicable.
<b>Oxidising properties</b>	Not applicable.
<b>Solubility</b>	Slightly soluble in water

## 9.2. Other information

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

## SECTION 10: Stability and reactivity

## 10.1. Reactivity

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

## 10.2. Chemical stability

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

## 10.3. Possibility of hazardous reactions

	No Significant Hazard.
--	------------------------

## 10.4. Conditions to avoid

	No Significant Hazard.
--	------------------------

## 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.
--	---

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28**SECTION 11: Toxicological information****11.1. Information on toxicological effects**

Acute toxicity	Not applicable. Based on available data, the classification criteria are not met.
Skin corrosion/irritation	May cause irritation to skin.
Serious eye damage/irritation	Causes serious eye irritation.
Respiratory or skin sensitisation	May cause sensitisation by skin contact.
Germ cell mutagenicity	Not applicable. Based on available data, the classification criteria are not met.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Not applicable. Based on available data, the classification criteria are not met.
STOT-single exposure	Not applicable. Based on available data, the classification criteria are not met.
STOT-repeated exposure	Chronic Health Effects: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This product contains trace quantities of naturally occurring radioactive uranium, thorium and radium (106-120 Picocuries/gram). Overexposure to respirable dust containing radioactive materials may cause lung cancer. Zirconium silicate is exempt from NRC regulations for source material per 10 CFR 40, since it falls under the definition of material containing less than 0.05% uranium or thorium. However, calculations show that observance of 2-2.8 mg/m <sup>3</sup> of respirable dust will, under voluntary guidelines, ensure that intake is less than 10% of the annual limits on intake (ALS) specified in 10 CFR 20.1502(B) and NRC Standards for the protection against radiation for uranium, thorium, radium and radioactive daughter decay products.).
Aspiration hazard	Not applicable. Based on available data, the classification criteria are not met.
Repeated or prolonged exposure	Inhalation of dust may cause shortness of breath.

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

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

**12.3. Bioaccumulative potential**

	Does not bioaccumulate.
--	-------------------------

**Partition coefficient**

	50/50™ Core Mix No data available
--	-----------------------------------

**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.
--	--

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

## Disposal methods

	Contact a licensed waste disposal company.
--	--

## Disposal of packaging

	Do NOT reuse empty containers. Empty containers can be sent for disposal or recycling.
--	--

## Further information

	For disposal within the EC, the appropriate code according to the European Waste Catalogue (EWC) should be used.
--	--

## SECTION 14: Transport information

## Further information

	The product is not classified as dangerous for carriage.
--	--

## SECTION 15: Regulatory information

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

## Regulations

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

## 15.2. Chemical safety assessment

	No data is available on this product.
--	---------------------------------------

## SECTION 16: Other information

## Other information

	<p>Training</p> <p>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>Social Dialogue on Respirable Crystalline Silica</p> <p>A multi-sectoral social dialogue agreement on Workers Health Protection through the Good Handling and Use of Crystalline Silica and Products Containing it was signed on 25 April 2006. This autonomous agreement, which receives the European Commission's financial support, is based on a Good Practices Guide. The requirements of the Agreement came into force on 25 October 2006. The Agreement was published in the Official Journal of the European Union (2006/C 279/02). The text of the Agreement and its annexes, including the Good Practices Guide, are available from <a href="http://www.nepsi.eu">http://www.nepsi.eu</a> and provide useful information and guidance for the handling of products containing respirable crystalline silica. Literature references are available on request from EUROSIL, the European Association of Industrial Silica Producers.,.</p>
--	---

	STOT RE1: H372 - DANGER - Causes damage to lungs through prolonged or repeated exposure by inhalation.
--	--

## Revision

	This document differs from the previous version in the following areas:.
--	--

## 50/50™ Core Mix

Revision 6  
Revision date 2017-02-28

## Other information

Text of risk phrases in Section 3	11 - Carcinogenicity.
	R20 - Harmful by inhalation.
	R36 - Irritating to eyes.
	R37/38 - Irritating to respiratory system and skin.
	R42/43 - May cause sensitisation by inhalation and skin contact.
Text of Hazard Statements in Section 3	R48/20 - Harmful: danger of serious damage to health by prolonged exposure through inhalation.
	STOT RE 1: H372 - Causes damage to organs through prolonged or repeated exposure .

## Further information

	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.
--	--