



SAFETY DATA SHEET

according to Regulation (EU) 2015/830

Page 1/8

B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

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

1.1. Product identifier

Product name	B Binder for Neoloy E Investment
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1.3. Details of the supplier of the safety data sheet

Company	Ransom & Randolph
Address	3535 Briarfield Boulevard, PO Box 1570 Maumee, Ohio 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. 08:00-17:00 (US Eastern Std. / GMT minus 5)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

2.1.2. Classification - EC 1272/2008	Flam. Liq. 3: H226; Eye Irrit. 2: H319; Acute Tox. 4: H332; STOT SE 3: H335;
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2.2. Label elements

Hazard pictograms	This substance / mixture has been classified in accordance with the US Federal OSHA Hazard Communication Standard 29CFR 1910.1200. Substance concentration band-ranges are presented, and minor ingredient composition maybe withheld, to protect trade secrets.
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Signal Word	Warning
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Hazard Statement	Flam. Liq. 3: H226 - Flammable liquid and vapour. Eye Irrit. 2: H319 - Causes serious eye irritation. Acute Tox. 4: H332 - Harmful if inhaled. STOT SE 3: H335 - May cause respiratory irritation.
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Precautionary Statement: Prevention	P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P233 - Keep container tightly closed. P240 - Ground/bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting// equipment.
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B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

2.2. Label elements

Precautionary Statement: Response	P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P264 - Wash (hands) thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/protective clothing/eye protection/face protection.
	P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a POISON CENTER/doctor/ 800-222-1222 /if you feel unwell. P337+P313 - If eye irritation persists: Get medical advice/attention. P370+P378 - In case of fire: Use dry chemical, Carbon dioxide (CO ₂), Alcohol resistant foam to extinguish.
Precautionary Statement: Storage	P403+P233 - Store in a well-ventilated place. Keep container tightly closed. P403+P235 - Store in a well-ventilated place. Keep cool. P405 - Store locked up.
Precautionary Statement: Disposal	P501 - Dispose of contents/container to local and national regulations

Further information

Not applicable. PBT and vPvB assessment.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

EC 1272/2008

Chemical Name	Index No.	CAS No.	EC No.	REACH Registration Number	Conc. (%w/w)	Classification
Tetraethyl silicate (Tetraethyl orthosilicate)	014-005-00-0	78-10-4	201-083-8		90 - 100%	Flam. Liq. 3: H226; Acute Tox. 4: H332; Eye Irrit. 2: H319; STOT SE 3: H335;
Ethyl Polysilicate		11099-06-2			1 - 10%	Flam. Liq. 3: H226; Eye Irrit. 2: H319;
Ethanol	603-002-00-5	64-17-5	200-578-6		1 - 10%	Flam. Liq. 2: H225;

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

Inhalation	Move the exposed person to fresh air. Seek medical attention.
Eye contact	Rinse immediately with plenty of water for 15 minutes holding the eyelids open. Seek medical attention if irritation or symptoms persist.
Skin contact	Wash off immediately with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation or symptoms persist.
Ingestion	Seek medical attention if irritation or symptoms persist. DO NOT INDUCE VOMITING.

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

Inhalation	Harmful by inhalation. Irritant, moderate respiratory. Inhalation may cause nausea and vomiting.
Eye contact	Irritant, moderate eye.
Skin contact	Irritating to skin.
Ingestion	Repeated or prolonged exposure may cause damage to liver, kidneys and central nervous system.

B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

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

Ingestion	Seek medical attention if irritation or symptoms persist.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

	Use as appropriate: Water spray. Dry chemical. Carbon dioxide (CO ₂). Alcohol resistant foam.
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5.2. Special hazards arising from the substance or mixture

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5.3. Advice for firefighters

	Cool fire exposed containers with waterspray. Self-contained breathing apparatus. Wear protective clothing.
	In use may form flammable/explosive vapour-air mixture. Vapours are heavier than air. Vapour may travel considerable distance to source of ignition and flash back. Risk of explosion if heated under confinement. Burning produces irritating, toxic and obnoxious fumes.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

	Ensure adequate ventilation of the working area. Wear suitable protective equipment. Eliminate all sources of ignition. Evacuate personnel to a safe area.
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6.2. Environmental precautions

	Do not allow product to enter drains. Prevent further spillage if safe.
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6.3. Methods and material for containment and cleaning up

	Absorb with inert, absorbent material. Sweep up. Transfer to suitable, labelled containers for disposal. Clean spillage area thoroughly with plenty of water.
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6.4. Reference to other sections

	See section [2, 8 & 13] for further information.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

	Avoid contact with eyes and skin. Avoid breathing dust/fume/gas/mist/vapours/spray. Wear protective clothing. Wash hands after handling the product. Ensure adequate ventilation of the working area. Keep away from sources of ignition - No smoking. Use explosion proof equipment. Ground/bond container and receiving equipment.
	Do NOT reuse empty containers. Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated.

7.2. Conditions for safe storage, including any incompatibilities

	Keep in a cool, dry, well ventilated area. Keep containers tightly closed. Store in correctly labelled containers.
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7.3. Specific end use(s)

	Restricted to professional users.
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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

	exposure limits: Ethyl Silicate - 100 ppm TWA OSHA PEL, 10 ppm TWA ACGIH. exposure limits: Ethanol - 1000 ppm TWA OSHA PEL, 1000 ppm STEL ACGIH TLV.
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8.1.1. Exposure Limit Values

B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

8.1.1. Exposure Limit Values

Ethanol	WEL 8-hr limit ppm: 1000	WEL 8-hr limit mg/m3: 1920
	WEL 15 min limit ppm: -	WEL 15 min limit mg/m3: -
Tetraethyl silicate (Tetraethyl orthosilicate)	WEL 8-hr limit mg/m3 total inhalable dust: -	WEL 15 min limit mg/m3 total inhalable dust: -
	WEL 8-hr limit mg/m3 total respirable dust: -	WEL 15 min limit mg/m3 total respirable dust: -
	DIR: 2017/164	8hTWA mg/m3: 44
	8hTWA ppm: 5	STEL mg/m3: -
	STEL ppm: -	NOT: -

8.2. Exposure controls

8.2.1. Appropriate engineering controls	Ensure adequate ventilation of the working area.
8.2.2. Individual protection measures	Wear chemical protective clothing.
Eye / face protection	Approved safety goggles.
Skin protection - Handprotection	Chemical resistant gloves (PVC).
Respiratory protection	Not normally required. In case of insufficient ventilation, wear suitable respiratory equipment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Clear
Odour	Pleasant
Odour threshold	No data available
pH	No data available
Melting point	Not applicable.
Freezing Point	No data available
Initial boiling point	= 168 °C
Flash point	27 °C
Evaporation rate	Not determined
Flammability (solid, gas)	Not applicable.
Vapour Flammability	No data available
Upper Explosive Limit	19 %
Lower Explosive Limit	3.8 %
Vapour pressure	= 1700 Pa
Vapour density	= 7.22
Relative density	= 0.934 (H2O = 1 @ 20 °C)
Fat Solubility	No data available
Partition coefficient	No data available
Autoignition temperature	> 360 °C
Decomposition temperature	No data available
Viscosity	= 0.72
Oxidising properties	No data available

9.2. Other information

B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

9.2. Other information

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

SECTION 10: Stability and reactivity

10.1. Reactivity

	No data available.
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10.2. Chemical stability

	Stable under normal conditions.
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10.3. Possibility of hazardous reactions

	Hazardous polymerization is not expected to occur.
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10.4. Conditions to avoid

	Heat, sparks and open flames.
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10.5. Incompatible materials

	Avoid contact with: Acids, Oxidising agents, Alkalis.
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10.6. Hazardous decomposition products

	Carbon oxides, silicon dioxide may be formed in fire conditions.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Harmful by inhalation.
Skin corrosion/irritation	Prolonged or repeated exposure may cause irritation to skin and mucous membranes.
Serious eye damage/irritation	Eyes: Contact may cause irritation with redness and tearing.
Respiratory or skin sensitisation	No Significant Hazard.
Germ cell mutagenicity	Adverse mutagenic and teratogenic effects have been found in laboratory animals.
Carcinogenicity	Based on available data, the classification criteria are not met.
Reproductive toxicity	Prolonged or repeated exposure may cause: Possible risk of harm to the unborn child.
STOT-single exposure	May cause damage to human organs based on animal data.
STOT-repeated exposure	May cause damage to human organs based on animal data.
Aspiration hazard	Based on available data, the classification criteria are not met.

11.1.4. Toxicological Information

	ethyl silicate. Oral Rat LD50 = >2500 mg/kg. Inhalation Rat LC50/5.03 mg/L h = 4.
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SECTION 12: Ecological information

12.2. Persistence and degradability

	has an atmospheric half life of about 16 hours.
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12.3. Bioaccumulative potential

	Lowest observed effect level.
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Partition coefficient

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B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

Partition coefficient

	B Binder for Neoloy E Investment No data available
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12.4. Mobility in soil

	very high mobility in soils.
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12.5. Results of PBT and vPvB assessment

	Not applicable.
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12.6. Other adverse effects

	This product hydrolyzes slowly in wet alkaline or acidic conditions to silicone dioxide and ethanol.
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SECTION 13: Disposal considerations

General information


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

	Do NOT reuse empty containers. Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated.
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SECTION 14: Transport information

Hazard pictograms

	
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14.1. UN number

	UN1993
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14.2. UN proper shipping name

	FLAMMABLE LIQUID, N.O.S. (Ethyl Silicate, Ethanol)
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14.3. Transport hazard class(es)

ADR/RID	3
Subsidiary risk	-
IMDG	3
Subsidiary risk	-
IATA	3
Subsidiary risk	-

14.4. Packing group

Packing group	III
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14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

ADR/RID

Hazard ID	30
Tunnel Category	(D/E)

IMDG

EmS Code	F-E S-E
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IATA

B Binder for Neoloy E Investment

Revision 3
Revision date 2021-02-17

IATA

Packing Instruction (Cargo)	366
Maximum quantity	220 L
Packing Instruction (Passenger)	355
Maximum quantity	60 L

SECTION 15: Regulatory information

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

Regulations	<p>U.S. FEDERAL REGULATIONS: B Binder for Neoloy E Investment CERCLA 103 Reportable Quantity: is not subject to CERCLA reporting requirements. Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.</p> <p>SARA TITLE III: Hazard Category For Section 311/312: See Section 2</p> <p>Section 313 Toxic Chemicals: This product contains the following chemicals subject to Annual Release Reporting Requirements Under SARA Title III, Section 313 (40 CFR 372): None</p> <p>EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.</p> <p>U.S. STATE REGULATIONS</p> <p>California Proposition 65: This product contains the following substances known to the State of California to cause cancer: none</p> <p>INTERNATIONAL REGULATIONS:</p> <p>Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic Substances List (DSL).</p> <p>European Inventory of New and Existing Chemicals Substances (EINECS): All of the components in this product are listed on the EINECS inventory.</p> <p>Australian Inventory of Chemical Substances: All of the components in this product are listed on the AICS for Australia.</p> <p>Japanese Existing and New Chemical Substances: All of the components in this product are listed on the Japanese ENCS list.</p> <p>Korean Existing Chemicals List: All of the components in this product are listed on the KECL for Korea.</p> <p>Philippine Inventory of Chemicals and Chemical Substances: All of the components in this product are listed on the PICCS.</p>
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15.2. Chemical safety assessment

	No data is available on this product.
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SECTION 16: Other information

Other information	
Revision	This document differs from the previous version in the following areas: 2 - Hazard pictograms.
Text of Hazard Statements in Section 3	Flam. Liq. 3: H226 - Flammable liquid and vapour. Eye Irrit. 2: H319 - Causes serious eye irritation.

B Binder for Neoloy E Investment

Revision 3

Revision date 2021-02-17

Other information

	Acute Tox. 4: H332 - Harmful if inhaled. STOT SE 3: H335 - May cause respiratory irritation. Flam. Liq. 2: H225 - Highly flammable liquid and vapour.
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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.
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