



SAFETY DATA SHEET

according to Regulation (EU) 2015/830

Page 1/9

Chromex(TM) Binder A

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 Chromex(TM) Binder A

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. 2: H225; Eye Irrit. 2: H319; Carc. 2: H351; STOT SE 1: H370;

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.



Signal Word Danger

Hazard Statement Flam. Liq. 2: H225 - Highly flammable liquid and vapour.
Eye Irrit. 2: H319 - Causes serious eye irritation.
Carc. 2: H351 - Suspected of causing cancer inhalation.
STOT SE 1: H370 - Causes damage to organs optic nerve and central nervous system .

Precautionary Statement: Prevention P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 - Keep container tightly closed.

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

2.2. Label elements

Precautionary Statement: Response	P240 - Ground/bond container and receiving equipment. P241 - Use explosion-proof electrical/ventilating/lighting// equipment. P242 - Use only non-sparking tools. P243 - Take precautionary measures against static discharge. 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. 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. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P308+P313 - IF exposed or concerned: Get medical advice/attention. P312 - Call a POISON CENTER/doctor/ 800-222-1222 /if you feel unwell. P321 - Specific treatment (see on this label). P337+P313 - If eye irritation persists: Get medical advice/attention. P370+P378 - In case of fire: Use carbon dioxide (CO2), Alcohol resistant foam, Dry chemical to extinguish.
Precautionary Statement: Storage	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		40 - 50%	Flam. Liq. 3: H226; Acute Tox. 4: H332; Eye Irrit. 2: H319; STOT SE 3: H335;
Ethanol	603-002-00-5	64-17-5	200-578-6		30 - 40%	Flam. Liq. 2: H225;
Isopropanol (Propan-2-ol)	603-117-00-0	67-63-0	200-661-7		1 - 10%	Flam. Liq. 2: H225; Eye Irrit. 2: H319; STOT SE 3: H336;
Ethyl Polysilicate		11099-06-2			1 - 10%	Flam. Liq. 3: H226; Eye Irrit. 2: H319;
Methanol	603-001-00-X	67-56-1	200-659-6		1 - 10%	Flam. Liq. 2: H225; Acute Tox. 3: H331; Acute Tox. 3: H311; Acute Tox. 3: H301; STOT SE 1: H370;
Isobutyl methyl ketone (4-Methylpentan-2-one)	606-004-00-4	108-10-1	203-550-1		0 - 0.5%	Flam. Liq. 2: H225; Acute Tox. 4: H332; Eye Irrit. 2: H319; STOT SE 3: H335;

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.

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

4.1. Description of first aid measures

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. Suspected of causing cancer methyl Isobutyl Ketone. MAY BE FATAL IF SWALLOWED.

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 (CO2). 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. report releases required by. local and national regulations.
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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

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

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.

7.3. Specific end use(s)

Restricted to professional users.

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.
 exposure limits: Isopropanol - 400 ppm OSHA PEL, 200 ppm TWA & 400 ppm STEL ACGIH TLV.
 exposure limits: Methanol - 200 ppm OSHA PEL, 200 ppm TWA & 250 ppm STEL ACGIH TLV (skin).
 exposure limits: Methyl Isobutyl Ketone - 100 ppm OSHA PEL, 20 ppm TWA & 75 ppm STEL ACGIH TLV.

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: -
	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:
Isobutyl methyl ketone (4-Methylpentan-2-one)	WEL 8-hr limit ppm: 50	WEL 8-hr limit mg/m3: 208
	WEL 15 min limit ppm: 100	WEL 15 min limit mg/m3: 416
	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:
Isopropanol (Propan-2-ol)	WEL 8-hr limit ppm: 400	WEL 8-hr limit mg/m3: 999
	WEL 15 min limit ppm: 500	WEL 15 min limit mg/m3: 1250
	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:
Methanol	WEL 8-hr limit ppm: 200	WEL 8-hr limit mg/m3: 266
	WEL 15 min limit ppm: 250	WEL 15 min limit mg/m3: 333
	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:
Tetraethyl silicate (Tetraethyl orthosilicate)	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).

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

8.2. Exposure controls

Respiratory protection	Not normally required. In case of insufficient ventilation, wear suitable respiratory equipment.
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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid
Colour	Clear
Odour	Alcoholic
Odour threshold	No data available
pH	No data available
Melting point	Not applicable.
Freezing Point	No data available
Initial boiling point	= 79.7 °C
Flash point	6 °C
Evaporation rate	= 2.6
Flammability (solid, gas)	Not applicable.
Vapour Flammability	No data available
Upper Explosive Limit	36 %
Lower Explosive Limit	1.2 %
Vapour pressure	= 1700 Pa
Vapour density	= 8.2
Relative density	= 0.87 (H ₂ O = 1 @ 20 °C)
Fat Solubility	No data available
Partition coefficient	No data available
Autoignition temperature	> 360 °C
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	=
Oxidising properties	No data available

9.2. Other information

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
SADT	No data available
Conductivity	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

Chromex(TM) Binder A

Revision 3
Revision date 2021-02-17

10.5. Incompatible materials

Avoid contact with: Acids, Oxidising agents, Alkalis.

10.6. Hazardous decomposition products

Carbon oxides, silicon dioxide may be formed in fire conditions.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	Harmful by inhalation. Inhalation is irritating to the respiratory tract and may cause damage to the central nervous system. Inhalation may cause nausea and vomiting. Inhalation may cause coughing, tightness of the chest and irritation of the respiratory system.
	Ingestion is irritating to the respiratory tract and may cause damage to the central nervous system. Ingestion may cause nausea and vomiting.
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	Methyl Isobutyl Ketone may be a. CANCER HAZARD (CONTAINS MATERIAL WHICH) CAN CAUSE CANCER.
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

Methanol	Oral Rat LD50: 100 Inhalation Rat LC50/4 h: 3	Dermal Rabbit LD50: 300
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SECTION 12: Ecological information

12.1. Toxicity

Methanol	Fish LC50/96h: 15400.0000 mg/l	Algae EC50/120h: 530
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12.2. Persistence and degradability

has an atmospheric half life of about 16 hours.

12.3. Bioaccumulative potential

Lowest observed effect level.

Partition coefficient

Chromex(TM) Binder A No data available

12.4. Mobility in soil

very high mobility in soils.

12.5. Results of PBT and vPvB assessment

Not applicable.

SECTION 13: Disposal considerations

General information

Dispose of in compliance with all local and national regulations.

Disposal of packaging

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

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.

SECTION 14: Transport information

Hazard pictograms



14.1. UN number

UN1993

14.2. UN proper shipping name

FLAMMABLE LIQUID, N.O.S. (Ethanol, Isopropanol)

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	II
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14.5. Environmental hazards

Environmental hazards	No
Marine pollutant	No

ADR/RID

Hazard ID	33
Tunnel Category	(D/E)

IMDG

EmS Code	F-E S-E
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IATA

Packing Instruction (Cargo)	364
Maximum quantity	60 L
Packing Instruction (Passenger)	353
Maximum quantity	5 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: Chromex Binder A CERCLA 103 Reportable Quantity: Releases above the RQ of 166,600 pounds (based on the RQ for Methanol of 5000 pounds < 3%.) Many states have more stringent release reporting requirements. Report spills required under federal, state and local regulations.</p> <p>Clean Water Act - This material is not regulated Clean Air Act - Methyl Isobutyl Ketone is regulated</p>
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Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

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

SARA TITLE III:

Hazard Category For Section 311/312: See Section 2

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): Methanol CAS 67-56-1 < 3%, Methyl Isobutyl Ketone CAS 108-10-1 < 0.5%.

EPA Toxic Substances Control Act (TSCA) Status: All of the components of this product are listed on the TSCA inventory.

U.S. STATE REGULATIONS

California Proposition 65: This product can expose you to chemicals including Methyl Isobutyl Ketone (MIBK) which is known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

INTERNATIONAL REGULATIONS:

Canadian Environmental Protection Act: All of the components in this product are listed on the Domestic Substances List (DSL).

European Inventory of New and Existing Chemicals Substances (EINECS): All of the components in this product are listed on the EINECS inventory.

Australian Inventory of Chemical Substances: All of the components in this product are listed on the AICS for Australia.

Japanese Existing and New Chemical Substances: All of the components in this product are listed on the Japanese ENCS list.

Korean Existing Chemicals List: All of the components in this product are listed on the KECL for Korea.

Philippine Inventory of Chemicals and Chemical Substances: All of the components in this product are listed on the PICCS.

15.2. Chemical safety assessment

No data is available on this product.

SECTION 16: Other information

Other information

Revision	This document differs from the previous version in the following areas: 2 - Hazard pictograms. 14 - Further information.
Text of Hazard Statements in Section 3	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. Flam. Liq. 2: H225 - Highly flammable liquid and vapour. STOT SE 3: H336 - May cause drowsiness or dizziness. Flam. Liq. 1: H224 - Extremely flammable liquid and vapour. Acute Tox. 3: H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled STOT SE 1: H370 - Causes damage to organs . STOT SE 2: H371 - May cause damage to organs . EUH066 - Repeated exposure may cause skin dryness or cracking.

Chromex(TM) Binder A

Revision 3

Revision date 2021-02-17

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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