Material Safety Data Sheet
acc. to ISO/DIS 11014

Printing date 01/10/2012 Reviewed on 01/10/2012

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

· **Product identifier** MSDS 991033

· **Trade name: CRS Indicating Oxygen Trap**

· **Article number:** 202236-B, 202237-B, 202806, 202820, 202872, 202236-SS, 202237-SS
· **Application of the substance / the preparation** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Chromatography Research Supplies, Inc.
2601 Technology Drive
LOUISVILLE, KY 40299
USA
DJones@chromres.com

· **Information department:** Product safety department
· **Emergency telephone number:**
During normal opening times: +1 (502) 491-6300
CHEMTREC (24 Hours) 800-424-9300 (U.S.A.)
When Calling from Outside the U.S.A., Dial Your Access Code for the U.S.A., then 1, then 703-527-3887.

2 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Dangerous components:**			
1313-13-9	Manganese dioxide	H302; H332	35-55%
14807-96-6	Talc (Mg3H2(SiO3)4)		0-35%
1317-38-0	Activated Copper oxide	H251; H301	6-25%
1344-28-1	Aluminum oxide		0-10%
1305-78-8	Calcium oxide	H318	0-5%
1304-28-5	Barium oxide, obtained by calcining witherite	H331; H302	<1%
14808-60-7	Quartz (SiO2)		<1%
1314-13-2	Zinc oxide	H400; H410	<1%

· **Additional Components**		
7631-86-9	Silicon dioxide, chemically prepared	0-45%
1313-59-3	Sodium oxide	0-5%

3 Hazards identification

· **Classification of the substance or mixture**

GHS02 Flame

H251 Self-heating: may catch fire.

GHS07

H302 Harmful if swallowed.
H332 Harmful if inhaled.

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H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Harmful

Harmful by inhalation and if swallowed.

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

· **Information concerning particular hazards for human and environment:**
The product has to be labelled due to the calculation procedure of international guidelines.

· **Classification system:**
The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

· **Label elements**

· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).

· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Manganese dioxide
Activated Copper oxide

· **Hazard statements**
Self-heating: may catch fire.
Harmful if swallowed.
Harmful if inhaled.
Causes serious eye irritation.
Harmful to aquatic life with long lasting effects.

· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store bulk masses greater than 0.5 lbs at temperatures not exceeding 100°F.
Store away from other materials.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**

Health = 2
Fire = 4
Reactivity = 0

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· **HMIS-ratings (scale 0 - 4)**

HEALTH 2	Health = 2
FIRE 4	Fire = 4
REACTIVITY 0	Reactivity = 0

4 First aid measures

· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
· **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Generally the product does not irritate the skin.
· **After eye contact:** Rinse opened eye for several minutes under running water.
· **After swallowing:** Immediately call a doctor.

5 Firefighting measures

· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Not required.
· **Environmental precautions:**
Do not allow product to reach sewage system or any water course.
Inform respective authorities in case of seepage into water course or sewage system.
· **Methods and material for containment and cleaning up:**
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
• Do not open. Becomes hot on exposure to air.
Thorough dedusting.
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of dust.
· **Information about protection against explosions and fires:** No special measures required.

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· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** Keep receptacle tightly sealed.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Components with limit values that require monitoring at the workplace:**

1313-13-9 Manganese dioxide

PEL	Short-term value: C 5 mg/m³ as Mn
REL	Short-term value: 3 mg/m³ Long-term value: 1 mg/m³ as Mn
TLV	0.2 mg/m³ as Mn

14807-96-6 Talc (Mg3H2(SiO3)4)

PEL	20 mppcf ppm (containing <1% Quartz)
REL	2* mg/m³ *respirable dust
TLV	2* mg/m³ *as respirable fraction; Withdrawn from NIC; E

1344-28-1 Aluminum oxide

PEL	15* 5** mg/m³ *total dust **respirable fraction
REL	Short-term value: 1.5* mg/m³ *as resprable fraction
TLV	1* mg/m³ *as respirable fraction

1305-78-8 Calcium oxide

PEL	5 mg/m³
REL	2 mg/m³
TLV	2 mg/m³

1304-28-5 Barium oxide, obtained by calcining witherite

PEL	0.5 mg/m³ as Ba
REL	0.5 mg/m³ as Ba
TLV	0.5 mg/m³ as Ba

14808-60-7 Quartz (SiO2)

PEL	see Quartz listing
REL	0.05* mg/m³ *respirable dust
TLV	0.025* mg/m³ *as respirable fraction

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1314-13-2 Zinc oxide	
PEL	15* 5** 5*** mg/m³ *total dust **respirable dust ***fume
REL	Short-term value: C 15* 10*** mg/m³ Long-term value: 5 5*** mg/m³ *15-min; dust only ***fume
TLV	Short-term value: 10* mg/m³ Long-term value: 2* mg/m³ *as respirable fraction

· **Additional information:** The lists that were valid during the creation were used as basis.
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**
Safety glasses
• Side shields

9 Physical and chemical properties

· **General Information**	
· **Appearance:**	
Form:	Solid
Color:	Various colors
· **Odor:**	Odorless
· **Odour threshold:**	Not determined.
· **pH-value:**	Not applicable.
· **Change in condition**	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	Undetermined.
· **Flash point:**	Not applicable.
· **Flammability (solid, gaseous):**	Not determined.
· **Ignition temperature:**	• Not applicable.

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· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product does not present an explosion hazard.
· **Explosion limits:**	
Lower:	Not determined.
Upper:	Not determined.
· **Vapor pressure:**	Not applicable.
· **Density at 20°C (68 °F):**	1.2 g/cm³ (10.014 lbs/gal)
· **Relative density**	Not determined.
· **Vapour density**	Not applicable.
· **Evaporation rate**	Not applicable.
· **Solubility in / Miscibility with**	
Water:	Insoluble.
· **Segregation coefficient (n-octonol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not applicable.
Kinematic:	Not applicable.
· **Solvent content:**	
Organic solvents:	0.0 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
1314-13-2 Zinc oxide		
Oral	LD50	> 5000 mg/kg (rat)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** Irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

12 Ecological information

· **Aquatic toxicity:** No further relevant information available.

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· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Ecotoxical effects:**
· **Remark:** Harmful to fish
· **Additional ecological information:**
· **General notes:** Harmful to aquatic organisms

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.
· **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN3191
· **UN proper shipping name**	
· **DOT, IMDG, IATA**	SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Activated Copper oxide, Manganese dioxide)
· **ADR**	3191 SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Activated Copper oxide, Manganese dioxide)
· **Transport hazard class(es)**	
· **DOT, IMDG, IATA**	
· **Class**	4.2 Substances liable to spontaneous combustion.
· **Label**	4.2+6.1
· **ADR**	
· **Class**	4.2 Substances liable to spontaneous combustion
· **Label**	4.2+6.1
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	II
· **Environmental hazards:**	
· **Marine pollutant:**	No

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· **Special precautions for user**	Not applicable. Warning: Substances liable to spontaneous combustion
· **Danger code (Kemler):**	46
· **EMS Number:**	F-A,S-J
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **DOT**	
· **Remarks:**	• Product contains less than 30 g self-heating substance. See 49 CFR Ch. 1 § 173.4 for small quantity exceptions.
· **ADR**	
· **Remarks:**	• Product contains less than 30 g self-heating substance.
· **IMDG**	
· **Remarks:**	• Product contains less than 30 g self-heating substance.
· **IATA**	
· **Remarks:**	• Product contains less than 30 g self-heating substance. See IATA Section 2.6 for small quantity exceptions.
· **UN "Model Regulation":**	UN3191, SELF-HEATING SOLID, TOXIC, INORGANIC, N.O.S. (Activated Copper oxide, Manganese dioxide), 4.2 (6.1), II

15 Regulatory information

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

1344-28-1	Aluminum oxide

· **TSCA (Toxic Substances Control Act):**

All ingredients are listed.

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients is listed.

· **Carcinogenic categories**

· **EPA (Environmental Protection Agency)**

1313-13-9	Manganese dioxide	D
1304-28-5	Barium oxide, obtained by calcining witherite	CBD

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1314-13-2	Zinc oxide	II

· **IARC (International Agency for Research on Cancer)**

7631-86-9	Silicon dioxide, chemically prepared	3
14807-96-6	Talc (Mg3H2(SiO3)4)	3
14808-60-7	Quartz (SiO2)	1

· **NTP (National Toxicology Program)**

14808-60-7	Quartz (SiO2)	K

· **TLV (Threshold Limit Value established by ACGIH)**

14807-96-6	Talc (Mg3H2(SiO3)4)	A4
1344-28-1	Aluminum oxide	A4
1304-28-5	Barium oxide, obtained by calcining witherite	A4
14808-60-7	Quartz (SiO2)	A2

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

14808-60-7	Quartz (SiO2)

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **GHS label elements** The product is classified and labelled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**

GHS02 GHS07

· **Signal word** Danger

· **Hazard-determining components of labelling:**
Manganese dioxide
Activated Copper oxide
· **Hazard statements**
Self-heating: may catch fire.
Harmful if swallowed.
Harmful if inhaled.
Causes serious eye irritation.
Harmful to aquatic life with long lasting effects.
· **Precautionary statements**
If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Store bulk masses greater than 0.5 lbs at temperatures not exceeding 100°F.
Store away from other materials.
Dispose of contents/container in accordance with local/regional/national/international regulations.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Product safety department
· **Contact:** Mr. Jones
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent