ZirChrom®

... For Peak Performance

SAFETY DATA SHEET
Version 1.0
Revision Date: 6/1/2016
Print Date: 9/19/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product Identifiers

Product Name:	ZirChrom®-Chiral
Product Number:	ZRC01, ZRC02, ZRC03, ZRC04, ZRC05, ZRC06
Brand:	ZirChrom®

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

Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company:	ZirChrom Separations, Inc. 617 Pierce St. Anoka, MN 55303
Telephone:	+1 763-421-5264
Fax:	+1 763-421-2319

1.4 Emergency telephone number

Emergency Phone #: Chemtrec (USA): (800) 424-9300

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms:	Surface etched zirconium oxide particles
Formula:	ZrO2
Molecular weight:	123.22 g/ol
CAS-No:	1314-23-4

Hazardous Components:

Component	Classification	Concentration
Zirconium dioxide		100%

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration

In case of eye contact

Flush eyes with water as a precaution

In case of skin contact

Wash off with soap and plenty of water

If swallowed

Never give anything by mouth to an unconscious person, Rinse mouth with water

4.2 **Most important symptoms and effects, both acute and delayed**
The most important known symptoms and effects are described in the labeling (see section 2.2.) and/or in section 11.

4.3 **Indication of any immediate medical attention and special treatment needed**
No data available

5. FIREFIGHTING MEASURES

5.1 **Extinguishing media**
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide

5.2 **Special hazards arising from the substance or mixture**
Zirconium oxides

5.3 **Advice for firefighters**
Wear self-contained breathing apparatus for firefighting if necessary

5.4 **Further Information**
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 **Personal precautions, protective equipment and emergency procedures**
Avoid dust formation. Avoid breathing vapors, mist or gas. For personal protection - section 8.

6.2 **Environmental precautions**
Do not let product enter drains

6.3 **Methods and materials for containment and cleaning up**
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 **Reference to other sections**
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 **Precautions for safe handling**
Further processing of solid materials may result in the formation of combustible dusts. The potential for dust formation should be taken into account before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.2.

7.2 **Conditions for safe storage, including any incompatibilites**
Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 51): Non combustible solids.

7.3 **Specific end use(s)**
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 **Control parameters**
Components with workplace control parameters

Component	CAS-No.	Value	Control Parameter	Basis
Zirconium dioxide	1314-23-4	TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		

		STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact Material: Nitrile rubber Minimum layer thickness: 0.11 mm Break through time: 480 min Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M) data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type to the concentration and amount of dangerous substances, and to the specific work-place. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dust are desired, use type N95(US) or type P1(EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH(US) or CEN(EU).

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 **Information on basic physical and chemical properties**

a) Appearance — Form: solid
Color: white

b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point 2,700°C
f)	Initial boiling point and boiling point range	4,300°C at 1,013 hPa (760 mmHg)
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Relative density	5.850 g/cm3
n)	Water solubility	0.1 g/L - insoluble
o)	Partition coefficient n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products
Other decomposition products - No data available in the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:	No data available
Inhalation:	No data available
Dermal:	No data available
Skin corrosion/irritation:	Skin-Rabbit, Result: No skin irritation (OECD 404)
Serious eye damage/eye irritation:	Eyes-Rabbit, Result: Mild eye irritation (OECD 404)
Respiratory or skin sensitization:	No data available
Germ cell mutagenicity:	No data available

Carcinogencity:

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: No data available
Specific target organ toxicity-single exposure: No data available
Specific target organ toxicity - repeated exposure: No data available
Aspiration hazard: No data available
Additional Information: RTECS: ZH8800000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	Mortality L50 - Brachdanio rerio (zebrafish) -> 100 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and Other aquatic invertebrates	Static test E50 - Daphnia magna (water flea) -> 100 mg/l - 48h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/no conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste Treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company

Contaminated packaging
Dispose of as unused product

14. TRANSPORT INFORMATION

DOT(US): Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (DeMinimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right to Know Components

	CAS-No.	Revision Date
Zirconium dioxide	1314-23-4	1993-04-24

Pennsylvania Right to Know Components

	CAS-No.	Revision Date
Zirconium dioxide	1314-23-4	1993-04-24

New Jersey Right to Know Components

	CAS-No.	Revision Date
Zirconium dioxide	1314-23-4	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

HMIS Rating

Health Hazard:	0
Chronic Health Hazard:	0
Flammability:	0
Physical Hazard:	0

NFPA Rating

Health Hazard:	0
Fire Hazard:	0

Further Information
 The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. ZirChrom Separations, Inc. and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.zirchrom.com and/or the paperwork enclosed with your product for additional terms and conditions of sale.

Preparation Information
ZirChrom Separations, Inc.
763-421-5264
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