



SAFETY DATA SHEET

1. Identification

Product identifier	SIR-CHEM® DRY POWDER 63 RED	
Other means of identification	Not available.	
Recommended use	Non-destructive testing.	
Recommended restrictions	None known.	
Manufacturer / Importer / Supplier / Distributor information		
Company name	Circle Systems, Inc.	
Address	479 West Lincoln Ave. P.O Box 1228 Hinckley, IL 60520	
Telephone	815-286-3271	
E-mail	customerservice@circlesafe.com	
Emergency phone number	Chem-Tel	800-255-3924 (US & Canada); +1-813-248-0585 (International)

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
OSHA defined hazards	Combustible dust.
Label elements	
Hazard symbol	None.
Signal word	Warning.
Hazard statement	May form combustible dust concentrations in air.
Precautionary statement	
Prevention	Keep away from heat/sparks/open flames/hot surfaces. No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Prevent dust accumulation to minimize explosion hazard.
Response	Remove and wash contaminated clothing before re-use. In case of fire: Use appropriate media for extinction.
Storage	Store away from incompatible materials.
Disposal	Dispose of contents/containers in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNOC)	Not classified.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Iron Powder	7439-89-6	> 95
Pigment Red	5160-02-1	< 3

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Do not rub eyes. Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed	Dust may cause eye, skin and respiratory tract irritation.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Apply extinguishing media carefully to avoid creating airborne dust.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations and in the presence of an ignition source is a potential dust explosion hazard.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire-fighting equipment/instructions	In case of fire and/or explosion do not breathe fumes. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers.
General fire hazards	Heat may cause the containers to explode. May form combustible dust concentrations in air.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Use only non-sparking tools. Wear appropriate personal protective equipment. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	<p>ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).</p> <p>Large Spills: Sweep or shovel up material and place in a clearly labeled container for waste. Following product recovery, flush area with water.</p> <p>Small Spills: Collect dust using a vacuum cleaner equipped with HEPA filter.</p> <p>Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.</p>
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. Provide adequate precautions, such as electrical grounding and bonding, or inert atmospheres. Explosion proof exhaust ventilation is recommended. Wear appropriate personal protective equipment. Observe good industrial hygiene practices. Avoid prolonged exposure.
Conditions for safe storage, including any incompatibilities	Keep containers tightly closed in a dry, cool and well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep away from heat, sparks and open flame.

8. Exposure controls/personal protection

Occupational exposure limits

US OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Pigment red (CAS 5160-02-1)	PEL	0.5mg/m3

US ACGIH Threshold Limit Values

Components	Type	Value
Pigment red (CAS 5160-02-1)	TWA	0.5mg/m3

US NIOSH Pocket Guide to Chemical Hazards: Recommended exposure limit (REL)

Components	Type	Value
Pigment red (CAS 5160-02-1)	TWA	0.5mg/m3

US Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
Pigment red (CAS 5160-02-1)	TWA	1mg/m3

Biological limit values	No biological exposure limits noted for the ingredient(s).
Exposure guidelines	No exposure standards allocated.
Appropriate engineering controls	Explosion-proof general and local exhaust ventilation. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.
Individual protection measures, such as personal protective equipment	
Eye/face protection	Wear safety glasses with side shields (or goggles).
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves.
Other	Wear suitable protective clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Physical state	Solid.
Form	Powder.
Color	Red.
Odor	Odorless
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	2795 °F (1535 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not relevant.
Evaporation rate	Not relevant.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not relevant.
Flammability limit – upper (%)	Not relevant.
Explosive limit – lower (%)	Not available.
Explosive limit – upper (%)	Not available.
Vapor pressure	Not relevant.
Vapor density	Not relevant.

Specific gravity	2.5 (68 °F (20 °C))
Solubility(ies)	Insoluble in water.
Partition coefficient (n-octanol/water)	Not relevant.
Auto-ignition temperature	Not relevant
Decomposition temperature	Not available.
Viscosity	Not relevant.
Other information	
VOC (Weight %)	Not applicable.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Keep away from heat, sparks and open flame. Minimize dust generation and accumulation.
Incompatible materials	Contact with incompatible materials. Strong oxidizing agents.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	Expected to be a low ingestion hazard.
Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	Dust or powder may irritate the skin.
Eye contact	Dust may irritate the eyes.
Symptoms related to the physical, chemical and toxicological characteristics	Dust may cause eye, skin and respiratory tract irritation.

Information on toxicological effects

Acute toxicity	Expected to be a low hazard for usual industrial or commercial handling by trained personnel.	
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Components	Species	Test Results
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Iron Powder (CAS 7439-89-6)

Acute

Oral

LD50

Rat

30 g/kg

Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

IARC Monographs. Overall Evaluation of Carcinogenicity

Pigment Red (CAS 5160-02-1)

3 Not classifiable as to carcinogenicity to humans.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity – single exposure	Not classified.
Specific target organ toxicity – repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available for this product.
Mobility in soil	Not available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Waste from residues / unused products	Dispose of contents/container in accordance with local/regional/national/international regulations. Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200. All components are on the U.S. EPA TSCA Inventory List.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt D)

Not regulated.

US OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard Categories	Immediate Hazard – No Delayed Hazard – Yes Fire Hazard – Yes Pressure Hazard – No Reactivity Hazard – No
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Not listed.

SARA 302 Extremely hazardous substance

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Pigment red	5160-02-1	< 3

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Pigment red (CAS 5160-02-1)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US Massachusetts RTK - Substance List

Not regulated.

US New Jersey Worker and Community Right-to-Know Act

Pigment red (CAS 5160-02-1) 500 lbs

US Pennsylvania RTK - Hazardous Substances

Not regulated.

US Rhode Island RTK

Not regulated.

US California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Pigment red (CAS 5160-02-1)


International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	29-October-2013
Revision date	15-December-2017
Version #	03
Further information	Refer to NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids, for safe handling.
HMIS® ratings	Health: 1 Flammability: 1 Physical hazard: 0
NFPA Ratings	
List of abbreviations	LD50: Lethal Dose, 50% PEL: Permissible exposure limit TWA: Time weighted average
References	HSDB® - Hazardous Substances Data Bank
Disclaimer	The information in this (M)SDS was obtained from sources which we believe are reliable but cannot guarantee. Additionally, your use of this information is beyond our control and may be beyond our knowledge. Therefore, the information is provided without any representation or warranty express or implied.