



Safety Data Sheet

Radiara™

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03
Canadian Workplace Hazardous Material Information System (WHMIS) 2015
Mexico NOM-018-STPS-2000; NOM-018-STPS-2015
GHS (Globally Harmonized System)

Issue Date 07/Mar/2025
Print Date 07/Mar/2025

Revision Number 1.0 NA
Page 1 of 9

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

1.1. Product identifier

Product name Radiara™
Pure substance/mixture Mixture

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

Recommended use Dispersing agent. Carbonate scale removal.
Uses advised against None known

1.3. Details of the supplier of the safety data sheet

Manufacturer Miller Chemical and Fertilizer, LLC
120 Radio Rd
Hanover, PA 17331
Tel.: 717-632-8921
Fax.: 717-646-1104

Internet <http://www.millerchemical.com>

E-mail info@millerchemical.com

1.4. Emergency telephone number CHEMTREC: +1 800 424 9300 or International 1+703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

OSHA Regulatory Status This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

2.2. Label elements

Symbols/Pictograms None

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 2 of 9

Signal Word None**Hazard Statements** None**Precautionary Statements****Additional information** Not applicable**Hazards not otherwise classified (HNOC)** None known**SECTION 3: Composition/information on ingredients****Pure substance/mixture** Mixture

Chemical Name	CAS NUMBER:	Weight-%
Non-Hazardous	NONE	100

SECTION 4: First aid measures**4.1. Description of first aid measures****General Advice** When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.**Eye Contact** Flush with water (preferably using eye wash equipment) until irritation subsides. Seek medical advice if symptoms persist.**Skin Contact** Wash the skin with water. Remove contaminated clothing.**Ingestion** Wash out mouth thoroughly and drink 1-2 glasses of water in small sips.**Inhalation** Remove to fresh air. Wash out mouth with water and blow nose thoroughly.**4.2. Most important symptoms and effects, both acute and delayed** None known.**4.3. Indication of any immediate medical attention and special treatment needed** None known.**SECTION 5: Firefighting measures****5.1. Extinguishing media****Suitable Extinguishing Media**

Water spray (fog).

Unsuitable Extinguishing Media

None known.

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 3 of 9

5.2. Special hazards arising from the substance or mixture

None known.

5.3. Advice for firefighters**Special protective equipment for firefighters**

Wear a self-contained breathing apparatus and chemical protective clothing.

Fire-fighting measures

Water mist may be used to cool closed containers. No special fire protection measures are necessary. Standard procedure for chemical fires.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Keep unauthorized personnel away. Avoid dust formation. Ensure adequate ventilation. Use personal protection recommended in Section 8. In case of fire: Stop leak if safe to do so.

For non-emergency personnel

Keep unauthorized personnel away.

For emergency responders

Keep unauthorized personnel away. Use personal protection recommended in Section 8.

6.2. Environmental precautions

Avoid unnecessary release to the environment. Prevent spillage from entering drains and/or surface water.

6.3. Methods and material for containment and cleaning up

Neutralize with alkaline material (Lime, crushed limestone, sodium bicarbonate or soda ash). Flush area with water

6.4. Reference to other sections

See Section 8 for exposure controls and personal protection. See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

No special requirements. Avoid contact with eyes and skin.

7.2. Conditions for safe storage, including any incompatibilities

Keep container tightly closed and dry. Store away from incompatible materials. Keep out of reach of children.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits** No information available**Biological Limit Values** No information available

8.2. Exposure controls

Engineering Measures Provide a good standard of controlled ventilation (5 to 10 air changes per hour). Use exhaust ventilation to keep airborne concentrations below exposure limits. In case of insufficient ventilation, wear suitable respiratory equipment.

Personal protective equipment

Eye/Face Protection Wear safety glasses with side shields (or goggles).
Skin and Body Protection Wear suitable protective clothing.
Hand Protection For operations where prolonged or repeated skin contact may occur, impervious gloves should be worn.
Respiratory Protection In case of inadequate ventilation wear respiratory protection. In case of risk of formation of spray mist, wear respiratory protective equipment with P2 filter

Environmental Exposure Controls Dispose of in accordance with local regulations.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance:

Physical State	Liquid.
Color	Brown
Odor	Mild
Odor Threshold	Not applicable
pH	2.0 - 3.0 (solution for use)
Melting point / Freezing point	Not applicable
Boiling Point / Boiling Range	104 °C
Freezing Point	-2 °C
Flash Point	Not applicable
Evaporation Rate	Not determined
Flammability (solid, gas)	Not determined
Vapor Pressure	Not determined
Vapor Density	Not determined
Density	No data available
Water Solubility	Water Soluble
Partition coefficient	No information available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	< 600 cSt.
Kinematic viscosity	No data available
Oxidizing Properties	Not applicable
Particle Size	No information available
Specific Gravity	1.25
Percent Volatile	Not determined
VOC Content (%)	Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No data available

9.2.2. Other safety characteristics

Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity	Not reactive
10.2. Chemical stability	Stable under normal conditions
10.3. Possibility of hazardous reactions	May react with metals (iron, zinc, aluminum) to form highly flammable hydrogen gas which can form explosive mixtures with air
10.4. Conditions to avoid	None known
10.5. Incompatible materials	Strong oxidizers Metals (hydrogen formation)
10.6. Hazardous decomposition	On contact with certain metals, hydrogen is formed which, together with air, may

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 6 of 9

products form an explosive mixture

SECTION 11: Toxicological information**General Information** Users are advised to consider national Occupational Exposure Limits or other equivalent values.**Information on Likely Routes of Exposure**

Inhalation	Avoid inhalation of the product
Skin	No known hazard in contact with skin
Eyes	Minimally irritating.
Ingestion	Ingestion is not a likely route of exposure

11.1. Information on toxicological effects

Acute Toxicity	LD50 Oral (rat) > 5000 mg/kg Based on available data, the classification criteria are not met.
Respiratory Sensitization	No data available
Serious eye damage/eye irritation	Minimally irritating. Based on available data, the classification criteria are not met.
Skin Corrosion/Irritation	No data available
Skin Sensitization	No data available
Mutagenicity	No data available
Germ cell mutagenicity	No data available
Reproductive Toxicity	No data available
Carcinogenicity	No data available
Specific target organ toxicity - Single exposure	No data available
Specific target organ toxicity - Repeated exposure	No data available

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties	No endocrine disruptors present in concentrations \geq 0.1%
11.2.2. Other information	Not applicable

SECTION 12: Ecological information**12.1. Toxicity** Not considered to be harmful to aquatic life

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 7 of 9

12.2. Persistence and degradability	Partially biodegradable
12.3. Bioaccumulative potential	No bioaccumulation expected
12.4. Mobility in soil	Soluble in water Completely miscible
12.5. Results of PBT and vPvB assessment	No data available
12.6. Endocrine disrupting properties	No endocrine disruptors present in concentrations $\geq 0.1\%$
12.7. Other Adverse Effects	None known

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal Methods	If uncontaminated, recover and reuse as product. If contaminated with other materials, the nature and extend of contamination may require use of specialized disposal methods. Disposal should be in accordance with applicable regional, national and local laws and regulations.
Contaminated Packaging	Product residue may remain in empty containers. Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14: Transport information

Mode of Transportation (Road, Water, Air, Rail)

DOT	Not regulated
ADR	Not regulated
RID	Not regulated
ADN	Not regulated
IATA	Not regulated
IMDG/IMO	Not regulated
ICAO	Not regulated

14.1. UN number or ID number	None
14.2. UN proper shipping name	None
14.3. Transport hazard class(es)	None
14.4. Packing group	None
14.5. Environmental hazards	No
14.6. Special precautions for user	Not applicable

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 8 of 9

14.7. Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information**Global Inventories**

Pure substance/mixture

Mixture

Chemical Name	CAS Number	Canada (DSL)	Mexico	TSCA: United States
Non-Hazardous	-	Y	N	A

Y: Complies ; A: Active ; - / N: Exempt / Not Listed

EPA**CWA (Clean Water Act)**

Not regulated

CAA (Clean Air Act)

Not regulated

U.S. State Right-to-Know Regulations

Chemical Name	CAS Number	California Proposition 65	Massachusetts	Minnesota	New Jersey	Pennsylvania
Non-Hazardous	-	N	N	N	N	N

Y: Listed ; N: Not Listed

CANADA**WHMIS**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations (HPR) and the SDS contains all the information required by the HPR

SECTION 16: Other information**Prepared by**

Miller Chemical and Fertilizer, A Huber Company, Global Regulatory Affairs
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Issue Date

07/Mar/2025

Print Date

07/Mar/2025

Revision Number

1.0 NA

Reason for Version

New Format. OSHA (Occupational Safety and Health Administration of the US Department of Labor).

Abbreviations and acronyms

OSHA (Occupational Safety and Health Administration of the US Department of Labor)
 WHMIS (Workplace Hazardous Materials Information System)
 GHS (Globally Harmonized System)
 IARC (International Agency for Research on Cancer)
 PPE (Personal Protection Equipment)
 TWA (Time-Weighted Average)
 TLV® (Threshold Limit Value)
 STEL (Short Term Exposure Limit)
 RQ (Reportable Quantity) (RQ/% in mixture)
 DOT (Department of Transportation)

MILLER CHEMICAL

Safety Data Sheet
Radiara™

Issue Date 07/Mar/2025

Print Date 07/Mar/2025

Revision Number 1.0 NA

Page 9 of 9

TDG (Transport of Dangerous Goods) Canada
IATA (International Air Transport Association)
IMDG (International Maritime Dangerous Goods)
ICAO (International Civil Aviation Organization)

Disclaimer

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End of Safety Data Sheet