SAFETY DATA SHEET

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION	
Trade Name:	Refirma™ HydraGuard™ 0-3-3	
Primary Use:	Supplemental fertilizer	
Company Information:	Corporate Headquarters	**The Mosaic Company** 101 East Kennedy Blvd, Ste 2500 Tampa, FL 33602
	US Guarantor	**Mosaic Biosciences Headquarters** 5 Lab Drive, Suite 3200 Durham, NC 27709 **Production** 111 E. Tever Street Plant City, FL 33563-2417
	Canada Guarantor	**Mosaic Canada Crop Nutrition, LP** 1700 – 2010 12th Ave. Regina, SK Canada S4P 0M3
	Contact Info	**www.cropnutrition.com** +1 (813) 718-7284 MBNAinfo@mosaicco.com
Emergency Telephone:	**EMERGENCY OVERVIEW** **24 Hour Emergency Telephone Number:** **For Chemical Emergencies:** **Spill, Leak, Fire or Accident** **Call CHEMTREC** **North America: (800) 424-9300 (reference CCN201871)** **Others: (703) 527-3887 (collect)**	

SECTION 2	HAZARD IDENTIFICATION
OSHA/HCS Status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). See appropriate classifications below.
GHS Classification:	EYE IRRITATION - Category 2A
	**Signal Word: WARNING** **Hazard Statement(s)** Causes serious eye irritation.
Label Elements:	
Prevention:	Wear eye or face protection. Wash hands thoroughly after handling.
Response:	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

SECTION 3	COMPOSITION INFORMATION ON INGREDIENTS		
Composition:	**Component**	**CAS#**	**Percentage**
	Trimethylamine oxide	1184-78-7	<15% > 30%
	D-Glucopyranose, oligomeric, decyl octyl glycosides	68515-73-1	<10%

SECTION 4	FIRST AID MEASURES	
First Aid Procedures:	Eyes:	Move victim away from exposure and into fresh air. Flush eyes with plenty of clean water for at least 15 minutes. If symptoms persist, seek medical attention.
	Skin:	Wash contaminated area thoroughly with mild soap and water. If chemical or solution soaks through clothing, remove clothing and wash contaminated skin. If irritation develops and persists after washing, seek medical attention.
	Inhaled:	If inhaled or breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician
	Ingestion:	Rinse mouth thoroughly. If large amounts are swallowed, seek emergency medical attention.

SECTION 5	FIRE FIGHTING MEASURES
Extinguishing Media:	Water spray, alcohol-resistant foam, dry chemical or carbon dioxide
Protection of Firefighters:	Positive pressure, self-contained breathing apparatus is required for all firefighting activities involving hazardous materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

SECTION 6	ACCIDENTAL RELEASE MEASURES
Response Techniques:	**Personal precautions, protective equipment and emergency procedures** **For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. Eliminate all ignition sources. **For emergency responders:** If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel". **Environmental precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). **Methods and materials for containment and cleaning up** **Small spill:** Stop leak if without risk. Move containers from spill area. Clean up with absorbent materials (eg. soil, sand, diatomaceous earth or any non-flammable absorbent). Dispose of via a licensed waste disposal contractor. **Large spill:** Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Clean up with absorbent materials and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

SECTION 7	HANDLING AND STORAGE
Handling:	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Storage:	Avoid extreme temperatures, Avoid moisture. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

SECTION 8	EXPOSURE CONTROLS / PERSONAL PROTECTION

Control Parameters

Source	Material	TWA ppm	TWA mg/m³	STEL ppm	STEL mg/m³	Peak ppm	Peak mg/m³	TWA F/cc
US - Oregon Permissible Exposure Limits (Z3)	trimethylamine N-oxide (Inert or Nuisance Dust: (d) Total dust)	-	**10**	-	-	-	-	-
US OSHA Permissible Exposure Levels (PELs) - Table Z3	trimethylamine N-oxide (Inert or Nuisance Dust: (d) Respirable fraction)	-	**5**	-	-	-	-	-
US OSHA Permissible Exposure Levels (PELs) - Table Z3	trimethylamine N-oxide (Inert or Nuisance Dust: (d) Total dust)	-	**15**	-	-	-	-	-
US - Hawaii Air Contaminant Limits	trimethylamine N-oxide (Particulates not otherwise regulated - Total dust)	-	**10**	-	-	-	-	-
US - Hawaii Air Contaminant Limits	trimethylamine N-oxide (Inert or Nuisance Dust: (d) Respirable fraction)	-	**5**	-	-	-	-	-
US - Oregon Permissible Exposure Limits (Z3)	trimethylamine N-oxide (Inert or Nuisance Dust: (d) Respirable fraction)	-	**5**	-	-	-	-	-
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	trimethylamine N-oxide (Particulates not otherwise regulated Respirable fraction)	-	**5**	-	-	-	-	-
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	trimethylamine N-oxide (Particulates not otherwise regulated (PNOR)(f)- Respirable fraction)	-	**5**	-	-	-	-	-
US - Michigan Exposure Limits for Air Contaminants	trimethylamine N-oxide (Particulates not otherwise regulated, Respirable dust)	-	**5**	-	-	-	-	-

Exposure Controls		
Engineering Controls:	Use process enclosure, general dilution ventilation or local exhaust systems where necessary to maintain airborne dust concentration below the OSHA standards or in accordance with applicable regulations.	
Environmental Exposure	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.	
Personal Protective Equipment (PPE):	Eye/Face:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

	Skin:	**Hand protection:** Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. **Body protection:** Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. **Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
	Respiratory:	Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Ensure an MSHA/NIOSH-approved respirator or equivalent is used.
	Other:	A source of clean water should be available in the work area for flushing eyes and skin.
General Hygiene Considerations:	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.	

SECTION 9	PHYSICAL AND CHEMICAL PROPERTIES		
Appearance:	Yellow liquid	Vapor Pressure (mm Hg):	Not applicable
Odor:	fishy	Vapor Density (air=1):	Not applicable
Odor Threshold:	No data available	Specific Gravity or Relative Density:	Not applicable
Physical state:	Powder	Bulk Density:	1.08 g/cc
pH:	7.9	Solubility in Water:	Soluble
Melting Point/ Freezing Point:	Not applicable	Partition coefficient:	No data available
Boiling Point:	No data available	Auto-Ignition Temperature:	Not applicable
Flash Point:	Not applicable	Decomposition Temperature:	Not applicable
Evaporation Rate:	No data available	Viscosity:	No data available
Flammability:	Negative	Volatility:	No data available
Upper/Lower Flammability or explosive limits	Not explosive		

SECTION 10	STABILITY AND REACTIVITY
Reactivity:	No specific test data related to reactivity available for this product.
Chemical Stability:	Stable under normal conditions. Must be kept dry.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to Avoid:	Extreme temperatures.
Incompatible Materials:	Strong acid & alkali, organic solvents and oxidizing agents
Hazardous Decomposition Products:	None

SECTION 11 TOXICOLOGICAL INFORMATION

There is no data for the product itself. In accordance with the calculation methods established, this product is classified according to its components as acute tox, category 4 (H332: Harmful if inhaled).

a) Acute toxicity: The product is classified as dangerous for its acute toxicity according to the available data on the components and to the addition formula.

b) Skin corrosion or irritation: The product is not classified as corrosive/skin irritant based on the available data on the components.

c) Serious eye damage or eye irritation: The product is not classified as corrosive/eye irritant based on the available data on the components.

d) Respiratory or skin sensitization: No toxicological data are available for the product itself, the data provided by the suppliers lead to the non-classification of the product.

e) CMR - Carcinogenicity, Mutagenicity and reproductive toxicity: No toxicological data are available for the product itself, the data provided by the suppliers lead to non-classification of the product.

f) STOT - single and repeated exposure: No toxicological data are available for the product itself, the data provided by the suppliers lead to non-classification of the product.

g) Aspiration hazard: The product does not contain substances classified as hazardous by aspiration.

SECTION 12	ECOLOGICAL INFORMATION
Ecotoxicology:	No data available

SECTION 13 DISPOSAL CONSIDERATIONS

	The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14	TRANSPORT INFO
Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.	

SECTION 15	REGULATORY INFORMATION
TSCA 8(a) CDR Exempt/Partial exemption: Not regulated. United States inventory (TSCA): Not regulated.	

SECTION 16	OTHER INFORMATION
Disclaimer:	The information in this document is believed to be correct as of the date issued. **HOWEVER, MOSAIC MAKES NO GUARANTEE, REPRESENTATION, OR WARRANTY, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO THE USE OF THIS PRODUCT.** User is responsible for determining whether this product is fit for a particular purpose and suitable for user's method of use or application and assumes the risk of use thereof. The conditions and use of this product are beyond the control of Mosaic, and Mosaic disclaims any liability for loss or damage incurred in connection with the use or misuse of this product. Each user should review the recommended industrial hygiene and safe handling procedures in the specific context of the intended use and determine whether they are appropriate.
Preparation:	The preparation of this SDS was in accordance with ANSI Z400.1-2010.
Revision Date:	June 7, 2023