

MATERIAL SAFETY DATA SHEET

Vitalgro Carrageenan Foliar Fertilizer

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Vitalgro Carrageenan Foliar Fertilizer, Vitalgro C-PGP
SYNONYMS: Irradiated Carrageenan Based Foliar Fertilizer (Generic Name), Carrageenan plant food supplement
PRODUCT CODES: RMC

MANUFACTURER: Phlippine Nuclear Research Institute
DIVISION: Chemistry Research Section, Atomic Research Division
ADDRESS: Commonwealth Avenue, Diliman, Quezon City

**TECHNOLOGY ADAPTOR
& NATIONAL DISTRIBUTOR:** VVZ Corporation Inc.
ADDRESS: 18 South Zuzuegui, Matandang Balara, Quezon City

CONTACT NO: 0917-6541862

CHEMICAL NAME: kappa carrageenan
CHEMICAL FORMULA: $C_{24}H_{36}O_{25}S_2^{-2}$

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

<u>COMPONENT</u>	<u>CAS NO.</u>	<u>% WT</u>
Kappa carrageenan	11114-20-8	≤ 1.00%
Hydrogen peroxide	7722-84-1	≤ 0.50%

SECTION 3: HAZARDS IDENTIFICATION

POTENTIAL ACUTE HEALTH EFFECTS:
Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion

POTENTIAL CHRONIC HEALTH EFFECTS:
Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion. CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available.

SECTION 4: FIRST AID MEASURES

EYES: Rinse immediately with plenty of water, also under the eyelids, for a few minutes.

SKIN: Wash off immediately with plenty of water. Gently and thoroughly wash the contaminated area with running water and non-abrasive soap. If irritation persists, seek medical attention.

INGESTION: Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Obtain medical attention.

INHALATION: Not available.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

NFPA HAZARD CLASSIFICATION	FLAMMABILITY:	REACTIVITY:	PHYSICAL HAZARD:
HEALTH: 0	0	0	N/A

EXTINGUISHING MEDIA

SUITABLE:	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
UNSUITABLE:	No information available

FLASH POINT: No information available
METHOD: No information available

AUTOIGNITION TEMPERATURE: No information available

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EXPLOSION LIMITS

UPPER:	No information available
LOWER:	No information available
SENSITIVITY TO MECHANICAL IMPACT:	No information available
STATIC DISCHARGE:	No information available

HAZARDOUS DECOMPOSITION PRODUCTS:

Carbon monoxide (CO) Carbon dioxide (CO₂) Sulfur oxides

SECTION 6: ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: Ensure adequate ventilation. Use personal protective equipment.

ENVIRONMENTAL PRECAUTIONS: N/A

METHODS FOR CONTAINMENT AND CLEAN UP:

Use appropriate tools to absorb spilled liquid and transfer to a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS:

Keep away from excessive heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Wear suitable protective clothing. If you feel unwell, seek medical attention and show the label when possible.

STORAGE:

Keep in a safe place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Combustible materials should be stored away from extreme heat and away from strong oxidizing agents.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES: This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

ENGINEERING CONTROLS: Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

PERSONAL PROTECTION: Safety glasses. Lab coat. Gloves.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Clear solution
ODOR:	Odorless
PHYSICAL STATE:	Liquid
pH AS SUPPLIED:	2.0-3.0
BOILING POINT:	Similar to water
MELTING POINT:	Similar to water
FREEZING POINT:	Similar to water
VAPOR PRESSURE (mmHg):	Similar to water
SPECIFIC GRAVITY (H ₂ O = 1):	Similar to water

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (con't)

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SOLUBILITY IN WATER: Soluble in water

PERCENT SOLIDS BY WEIGHT: 1 gram per litre

MOLECULAR WEIGHT: <5 kDa

VISCOSITY: Similar to water

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal conditions

CONDITIONS TO AVOID: Excess heat

INCOMPATIBILITY: Strong oxidizing agents

HAZARDOUS DECOMPOSITION: Carbon monoxide (CO), carbon dioxide (CO₂), sulfur oxides

HAZARDOUS POLYMERIZATION: No information available

HAZARDOUS REACTIONS: None under normal processing

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Kappa carrageenan	>5000 mg/kg (rat)	>2000 mg/kg (rat)	>0.93 mg/L/4H

TOXICOLOGICALLY SYNERGISTIC No information available

IRRITATION No information available

SENSITIZATION No information available

CARCINOGENECITY The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Kappa carrageenan	Not listed	Not listed	Not listed	Not listed	Not listed	Not listed

MUTAGENIC EFFECTS Non-calstogenic.

REPRODUCTIVE EFFECTS No information available

DEVELOPMENTAL EFFECTS No information available

TERATOGENICITY No information available

STOT – SINGLE EXPOSURE No information available

STOT – REPEATED EXPOSURE No information available

ASPIRATION HAZARD No information available

**SYMPTOMS/EFFECTS,
BOTH ACUTE AND DELAYED** No information available

ENDOCRINE DISRUPTOR EFFECT No information available

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Not available.

BOD5 AND COD: Not available.

PRODUCTS OF BIODEGRADATION: Possibly hazardous short term degradation products are not likely.

SECTION 13: DISPOSAL CONSIDERATIONS

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WASTE DISPOSAL METHOD: Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

SECTION 14: TRANSPORT INFORMATION

DOT CLASSIFICATION: Not a DOT controlled material (United States).
IDENTIFICATION: Not applicable.
SPECIAL PROVISIONS: Not applicable.

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

TSCA 12(b): Not applicable

SARA 313: Not applicable

SARA 311/312 HAZARD CATEGORIES

ACUTE HEALTH HAZARD	YES
CHRONIC HEALTH HAZARD	NO
FIRE HAZARD	NO
SUDDEN RELEASE OF PRESSURE HAZARD	NO
REACTIVE HAZARD	NO

CLEAN WATER ACT Not applicable

CLEAN AIR ACT Not applicable

OSHA Not applicable

CERCLA Not applicable

SECTION 16: OTHER INFORMATION

PREPARED BY: Chemistry Research Section
Atomic Research Division
Philippine Nuclear Research Institute
Email: lvabad@pnri.dost.gov.ph
And
VVZ Corporation Inc.
18 South Zuzuaregui, Matandang Balara, Quezon City
Email: vitalgro2020@gmail.com

CREATION DATE: 5-January-2023

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