SAFETY DATA SHEET

Section 1: Product and Company Identification

PRODUCT IDENTIFIER

Product Name	VegaCHO® Medium, Liquid
Product Code	P121662-01

For Research Use or Further Manufacturing. Not for diagnostic or therapeutic use in humans or animals.

SUPPLIER

OPM Biosciences, Inc.
5653 Stoneridge Dr., Ste. 117&118
Pleasanton, CA 94588, USA
(925) 523-2199
opmus_sales@opmbiosciences.com / Tech-support@opmbiosciences.com

IN CASE OF EMERGENCY

In the United States: For 24/7 multilingual advice for a spill, leak, fire, exposure, or accident, please call CHEMTREC at +1 703-527-3887 (Washington DC) or 1-800-424-9300 (toll-free) and provide CCN 1023867.

For locations outside of United States: Please contact VelocityEHS at +1 813-248-0585. Collect calls are accepted. Shipments originating in USA and going to other locations outside of USA should also contact 1-800-255-3924. Please provide contract number MIS6517807 in the call. If the caller does not speak English, after accepting the call, VelocityEHS will conference call to their on-line translation service for live interpretation.

SECTION 2: Hazard Identification

Hazard class and label elements of the product according to GHS (the eighth revised edition):

GHS HAZARD CLASS

Skin Corrosion/Irritation	Category 3
Sensitization-Skin	Category 1

GHS LABEL ELEMENTS

Hazard pictograms

Signal word — Warning

HAZARD STATEMENTS

H316	Causes mild skin irritation
H317	May cause an allergic skin reaction

PRECAUTIONARY STATEMENTS

Prevention

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

Response

P321	Specific treatment (see measures on this label).
P302+P352	If on skin: wash with plenty of water.
P332+P317	If skin irritation occurs: get medical help.
P333+P317	If skin irritation or rash occurs: get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.

Storage

Not Applicable

Not Applicable

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/ international regulations.

SECTION 3: Composition/Information on Ingredients

SUBSTANCE/MIXTURE

Component	CAS No.	EC No.	Concentration (Volume or weight percent, %)
Amino acid salts	N/A	N/A	<42.38
Copper containing inorganic compounds	7758-99-8	231-847-6	<0.01
Iron containing inorganic compounds	7782-63-0	231-753-5	<0.01
2-mercaptoethanol	60-24-2	200-464-6	<0.01

SECTION 4: First-Aid Measures

DESCRIPTION OF FIRST AID MEASURES

General advice

Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.

Eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Skin contact

Take off contaminated clothing and shoes immediately. Wash off with plenty of water for at least 15 minutes and consult a physician if feel uncomfortable.

Ingestion

Do not induce vomiting. Never give anything by mouth to an unconscious person. Call a physician or Poison Control Center immediately.

Inhalation

Move victim into fresh air. If breathing is difficult, give oxygen. Do not use mouth to mouth resuscitation if victim ingested or inhaled the substance. If not breathing, give artificial respiration and consult a physician immediately.

Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

1. Treat symptomatically.
2. Symptoms may be delayed.

SECTION 5: Fire-Fighting Measures

EXTINGUISHING MEDIA

Suitable extinguishing media	Dry chemical, carbon dioxide, water spray, alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

SPECIFIC HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

1. Containers may explode when heated.
2. Fire exposed containers may vent contents through pressure relief valves.
3. May expansion or decompose explosively when heated or involved in fire.

ADVICE FOR FIREFIGHTERS

1. As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2. Fight fire from a safe distance, with adequate cover.
3. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental Release Measures

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

1. Ensure adequate ventilation. Remove all sources of ignition.
2. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.
3. Use personal protective equipment. Avoid breathing vapours, mist, gas or dust.

ENVIRONMENTAL PRECAUTIONS

1. Prevent further leakage or spillage if safe to do so.
2. Discharge into the environment must be avoided.

METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

1. Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding. Keep leaks in a ventilated place.
2. Adhered or collected material should be promptly disposed of, in accordance with appropriate laws and regulations.
3. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

SECTION 7: Handling and Storage

PRECAUTIONS FOR SAFE HANDLING

1. Handling should be performed in a well-ventilated place.
2. Wear suitable personal protective equipment.
3. Avoid contact with skin and eyes.
4. Keep away from heat/sparks/open flames/hot surfaces.
5. Take precautionary measures against static discharges.

PRECAUTIONS FOR STORAGE

1. Keep containers tightly closed.
2. Keep containers in a dry, cool and well-ventilated place. Keep away from heat/sparks/open flames/hot surfaces.
3. Keep away from heat/sparks/open flames/ hot surfaces.
4. Store away from incompatible materials and foodstuff containers.

SECTION 8: Exposure Controls/Personal Protection

CONTROL PARAMETERS

Occupational Exposure Limit Values	No information available
Biological limit values	No information available
Monitoring Methods	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. GBZ/T 160 Determination of toxic substances in workplace air (Series effective standard) and GBZ/T 300 Determination of toxic substances in workplace air (Series standard).

ENGINEERING CONTROLS

1. Ensure adequate ventilation, especially in confined areas.
2. Ensure that eyewash stations and safety showers are close to the workstation location.
3. Use explosion-proof electrical/ventilating/lighting/equipment.
4. Set up emergency exit and necessary risk-elimination area.

PERSONAL PROTECTIVE EQUIPMENT

Eye protection	Tightly fitting safety goggles (approved by EN 166(EU) or NIOSH (US).
Hand protection	Wear protective gloves (such as butyl rubber), passing the tests according to EN 374(EU), US F739 or AS/NZS 2161.1 standard.
Respiratory protection	If exposure limits are exceeded or if irritation or other symptoms are experienced, use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges.
Skin and body protection	Wear fire/flame resistant/retardant clothing and antistatic boots.

SECTION 9: Physical and Chemical Properties

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light reddish brown transparent liquid
Odor	No information available
Odor Threshold	No information available
pH	7.3
Melting Point/Freezing Point (°C)	No information available
Flash Point (°C) (Closed Cup)	Not applicable
Flammability	No information available
Vapor Pressure (KPa)	Not applicable
Relative Density (Water=l)	No information available
n-Octanol/Water Partition Coefficient	No information available
Decomposition Temperature (°C)	No information available
Particle characteristics	No information available
Evaporation Rate	Not applicable
Upper/lower explosive limits [%(v/v)]	Upper limit: No information available; Lower limit: No information available
Relative Vapour Density(Air = 1)	Not applicable
Solubility	No information available
Auto-Ignition Temperature (°C)	No information available
Kinematic Viscosity (mm^2/s)	Not applicable

SECTION 10: Stability and Reactivity

PHYSICAL AND CHEMICAL PROPERTIES

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under normal use and proper

Possibility of hazardous reactions	No information available.
Conditions to avoid	Incompatible materials, heat, flame, and spark.
Incompatible materials	No information available.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological Information

ACUTE TOXICITY

Acute toxicity

Component	CAS No.	LD_{50}(Oral)	LD_{50}(Dermal)	LC_{50}(Inhalation, 4h)
Copper containing inorganic compounds	7758-99-8	300mg/kg (Rat)	> 2000mg/kg (Rat)	No information available
Iron containing inorganic compounds	7782-63-0	1520mg/kg (Mouse)	No information available	No information available
2-mercaptoethanol	60-24-2	244mg/kg (Rat)	No information available	No information available

SKIN CORROSION/IRRITATION

Causes mild skin irritation (Category 3)

SERIOUS EYE DAMAGE/IRRITATION

No information available

SKIN SENSITIZATION

May cause an allergic skin reaction (Category 1)

RESPIRATORY SENSITIZATION

No information available

GERM CELL MUTAGENICITY

No information available

CARCINOGENICITY

ID	CAS No.	Component	IARC	NTP
1	N/A	Amino acid salts	Not Listed	Not Listed
2	7758-99-8	Copper containing inorganic compounds	Not Listed	Not Listed
3	7782-63-0	Iron containing inorganic compounds	Not Listed	Not Listed
4	60-24-2	2-mercaptoethanol	Not Listed	Not Listed

REPRODUCTIVE TOXICITY

No information available

REPRODUCTIVE TOXICITY (ADDITIONAL)

No information available

STOT-SINGLE EXPOSURE

Causes mild skin irritation (Category 3)

STOT-REPEATED EXPOSURE

No information available

ASPIRATION HAZARD

No information available

SECTION 12: Ecological Information

ACUTE AQUATIC TOXICITY

Component	CAS No.	Fish	Crustaceans	Algae
Copper containing inorganic compound	7758-99-8	LC_{50}: 0.31 mg/L (96 h) (Fish)	EC_{50}: 0.06 mg/L (48 h)	ErC_{50}: 0.05 mg/L (96h)
Iron containing inorganic compounds	7782-63-0	LC_{50}: > 100 mg/L (96 h) (Fish)	EC_{50}: 91 mg/L (48h)	ErC_{50}: 92 mg/L (72h)
2-mercaptoethanol	60-24-2	LC_{50}: 29mg/L (96 h) (Fish)	EC_{50}: 0.12 mg/L (48h)	ErC_{50}: 0.17 mg/L (72h)

CHRONIC AQUATIC TOXICITY

Component	CAS No.	Fish	Crustaceans	Algae
Iron containing inorganic compounds	7782-63-0	No information available	NOEC: 10 mg/L	NOEC: 51 mg/L
2-mercaptoethanol	60-24-2	No information available	No information available	NOEC: 0.058 mg/L

OTHERS

Persistence and degradability	No information available
Bioaccumulative potential	No information available
Mobility in soil	No information available
Results of PBT and vPvB assessment	Copper containing inorganic compounds does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907 /2006, annex XIII. Iron containing inorganic compounds does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907 /2006, annex XIII. 2-mercaptoethanol does not meet the criteria for PBT and vPvB according to Regulation (EC) No 1907 /2006, annex XIII.

SECTION 13: Disposal Considerations

Waste treatment methods and disposal	Before disposal, please refer to the relevant national and local laws and regulations. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazards when empty. Keep away from heat and ignition sources. Return to supplier for recycling if possible. Refer to Waste chemicals and Contaminated packaging.

SECTION 14: Transport Information

LABEL

Transporting Label	Not applicable

IATA / ADR / DOT-US / IMDG

Not regulated in the meaning of transport regulations.

UN number	Not applicable
UN proper shipping name	Not applicable
Transport hazard class(es)	Not applicable
Packing group	Not applicable

SECTION 15: Regulatory Information

INTERNATIONAL CHEMICAL INVENTORY

Component	EINECS	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
Amino acid salts	×	×	×	×	×	×	×	×	×
Copper containing inorganic compounds	×	×	×	√	√	√	√	√	×
Iron containing inorganic compounds	×	×	×	√	√	√	√	√	×
2-mercaptoethanol	√	√	√	√	√	√	√	√	√

[EINECS] European Inventory of Existing Commercial Chemical Substances
[TSCA] United States Toxic Substances Control Act Inventory
[DSL] Canadian Domestic Substances List
[IECSC] China Inventory of Existing Chemical Substances
[NZIoC] New Zealand Inventory of Chemicals
[PICCS] Philippines Inventory of Chemicals and Chemical Substances
[KECI] Korea Existing Chemicals Inventory
[AIICS] Australian. Inventory of Industrial Chemical
[ENCS] Japan Inventory of Existing & New Chemical Substances

Note: "√" Indicates that the substance included in the regulations
"×" No data or not included in the regulations.

US STATE REGULATIONS

Chemical Name	Massachusetts - RTK (Right-to-Know)	New Jersey - RTK (Right-to-Know)	Pennsylvania - RTK (Right-to-Know)
Nickel (II) sulfate hexahydrate (1:1:6)	Listed	Listed	Listed
Cadmium Chloride $2.5H_2O$	Listed	Listed	Listed

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	CAS No.	Weight-%	Category
Nickel (II) sulfate hexahydrate (1:1:6)	10101-97-0	<0.001%	Carcinogen Developmental
Cadmium Chloride $2.5H_2O$	35658-65-2	<0.001%	Male Reproductive Carcinogen Listed

WHMIS Hazard Class

This product has been classified in accordance with the Hazardous Products Regulations (HPR). It is not considered a hazardous product under WHMIS 2015.

SECTION 16: Other information

INFORMATION ON REVISION

Creation date	2021/04/25
Revision date	2021/04/25
Version Number	NASDS107A

REFERENCE

[1] ICSC: https://www.ilo.org/dyn/icsc/showcard.home
[2] IARC: http://www.iarc.fr/
[3] OECD: https://www.echemportal.org/echemportal/
[4] CAMEO: http://cameochemicals.noaa.gov/search/simple
[5] NLM: http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp
[6] EPA: http://cfpub.epa.gov/iris/
[7] ERG: http://www.phmsa.dot.gov/hazmaUlibrary/erg
[8] Germany GESTIS-database on hazard substance: http://gestis-en.itrust.de/

ABBREVIATIONS AND ACRONYMS

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organized for Economic Cooperation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation

			Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC_{50}	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD_{50}	Lethal Dose 50%	NTP	National Toxicology Program
EC_{50}	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC_X	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulate
P_{OW}	Partition Coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration Factor	RPE	Respiratory Protective Equipment
ED	Endocrine Disruptor		

DISCLAIMER

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 8th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage, or expense arising out of or in any way connected with the handling, storage, use, or disposal of the product.

End of Safety Data Sheet