



Material Safety Data Sheet

MATRIXNUTRITION

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY

PRODUCT IDENTITY: DENOVO SOLUTION
COMPANY IDENTITY: MATRIX NUTRITION, LLC
COMPANY ADDRESS: 4120 North 38th Drive
COMPANY CITY: PHOENIX, AZ 85019
COMPANY PHONE: 1-602-621-4944
CHEMTREC PHONE: 1-800-424-9300

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

CONTAINS: 50-60% DL-MALIC ACID (617-48-1),
30-40% WATER (7732-18-5),
0-10% MALEIC ACID (110-16-7),
0- 2% FUMARIC ACID (110-17-8)

Number in parentheses is CAS #, number in brackets is European EC #.

SECTION 3. HAZARDS IDENTIFICATION

RISK STATEMENTS:

R36/37/38 Irritating to eyes, respiratory system, and skin.
R25 Toxic if swallowed.
R43 May cause sensitization by skin contact.

SAFETY STATEMENTS:

S24/25 Avoid contact with skin and eyes.

SECTION 4. FIRST AID MEASURES

EYE CONTACT:

For eyes, flush with plenty of water for 15 minutes & get medical attention.

SKIN CONTACT:

In case of contact with skin immediately remove contaminated clothing.
Wash thoroughly with soap & water. Wash contaminated clothing before reuse.

INHALATION:

After high vapor exposure, remove to fresh air. If breathing is difficult, give oxygen. If breathing has stopped, trained personnel should immediately begin artificial respiration. If the heart has stopped, trained personnel should immediately begin cardiopulmonary resuscitation (CPR).

SWALLOWING:

Rinse mouth. GET MEDICAL ATTENTION IMMEDIATELY. Do NOT give liquids to an unconscious or convulsing person.

SECTION 5. FIRE FIGHTING MEASURES

FIRE & EXPLOSION PREVENTIVE MEASURES

Not applicable.

EXTINGUISHING MEDIA

Use appropriate extinguishing media for surrounding fire.



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SPECIAL FIRE FIGHTING PROCEDURES

Water spray may be ineffective on fire but can protect fire-fighters & cool closed containers. Use fog nozzles if water is used.
Do not enter confined fire-space without full bunker gear.
(Helmet with face shield, bunker coats, gloves & rubber boots).
Use NIOSH approved positive-pressure self-contained breathing apparatus.

UNUSUAL EXPLOSION AND FIRE PROCEDURES

Noncombustible.
Keep container tightly closed.
Closed containers may explode if exposed to extreme heat.
Applying to hot surfaces requires special precautions.

SECTION 6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE MEASURES:

Keep unprotected personnel away.
Wear appropriate personal protective equipment given in Section 8.

CONTAINMENT AND CLEAN-UP MEASURES:

Stop spill at source. Dike and contain.
Collect leaking & spilled liquid in sealable containers as far as possible.

SECTION 7. HANDLING AND STORAGE

HANDLING

Use only with adequate ventilation.
Avoid prolonged or repeated contact with skin.
Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.

STORAGE

Isolate from strong oxidants. Do not store above 49 C/120 F.
Keep container tightly closed & upright when not in use to prevent leakage.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION:

RESPIRATORY EXPOSURE CONTROLS

A respiratory protection program that meets OSHA 29 CFR 1910.134 and ANSI Z86.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant a respirator's use.

VENTILATION

LOCAL EXHAUST : Necessary
MECHANICAL (GENERAL) : Acceptable
SPECIAL : None
OTHER : None

Please refer to ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

PERSONAL PROTECTIONS:

Wear OSHA Standard goggles or face shield. Consult Safety Equipment Supplier.
Wear gloves, apron & footwear impervious to this material. Wash clothing before reuse.



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WORK & HYGIENIC PRACTICES:

Provide readily accessible eye wash stations & safety showers.
Wash at end of each workshift & before eating, smoking or using the toilet.
Promptly remove clothing that becomes contaminated. Destroy contaminated leather articles. Launder or discard contaminated clothing.

SECTION 9. PHYSICAL DATA

APPEARANCE :	Liquid, Clear to Dark Brown
ODOR :	Mild
INITIAL BOILING RANGE :	101 C / 214 F
AUTO IGNITION TEMPERATURE :	Not Applicable
LOWER FLAMMABLE LIMIT IN AIR (% by vol):	Not Applicable
FLASH POINT (TEST METHOD):	Not Applicable
FLAMMABILITY CLASSIFICATION:	Non-Combustible
GRAVITY @ 68/68 F / 20/20 C :	
SPECIFIC GRAVITY (Water=1) :	1.230
POUNDS/GALLON :	10.25
VOC'S (>0.44 Lbs/Sq In) :	0.0 Vol. % / 0.0 g/L / 0.000 Lbs/Gal
TOTAL VOC'S (TVOC) :	0.0 Vol. % / 0.0 g/L / 0.000 Lbs/Gal
NONEXEMPT VOC'S (CVOC) :	0.0 Vol. % / 0.0 g/L / 0.000 Lbs/Gal
HAZARDOUS AIR POLLUTANTS (HAPS) :	0.0 Wt. % / 0.0 g/L / 0.000 Lbs/Gal
VAPOR PRESSURE (mm of Hg)@20 C	17.5
NONEXEMPT VOC PARTIAL PRESSURE (mm of Hg @ 20 C)	0.0
VAPOR DENSITY (air=1) :	0.6
WATER ABSORPTION :	Appreciable

SECTION 10. STABILITY & REACTIVITY

STABILITY

Stable under normal conditions.

CONDITIONS TO AVOID

Not Applicable.

MATERIALS TO AVOID

Strong oxidizers, strong bases, alkali metals, amines, and carbonates.

HAZARDOUS DECOMPOSITION PRODUCTS

None.

HAZARDOUS POLYMERIZATION

Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

MATERIAL	CAS #	TWA (OSHA)	TLV (ACGIH)	HAP
DL-Malic Acid	617-48-1	None Known	None Known	No
Water	7732-18-5	None Known	None Known	No
Maleic Acid	110-16-7	None Known	None Known	No
Fumaric Acid	110-17-8	None Known	None Known	No

This product contains no EPA Hazardous Air Pollutants (HAP) in amounts > 0.1%.



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MATERIAL CAS # CEILING STEL (OSHA/ACGIH)

None Known None Known

ACUTE HAZARDS

EYE & SKIN CONTACT:

Primary irritation to skin, defatting, dermatitis.
Primary irritation to eyes, redness, tearing, blurred vision.
Liquid can cause eye irritation. Wash thoroughly after handling.

INHALATION:

Anesthetic. Irritates respiratory tract. Acute overexposure
can cause serious nervous system depression. Vapor harmful.

SWALLOWING:

Swallowing can cause abdominal irritation, nausea, vomiting & diarrhea.

SUBCHRONIC HAZARDS/CONDITIONS AGGRAVATED

CONDITIONS AGGRAVATED:

None Known.

CHRONIC HAZARDS

CANCER, REPRODUCTIVE & OTHER CHRONIC HAZARDS:

This product has no carcinogens listed by IARC, NTP, NIOSH,
OSHA or ACGIH, as of this date, greater or equal to 0.1%.

SECTION 12. ECOLOGICAL INFORMATION

MAMMALIAN INFORMATION:

No mammalian information is available on this product.

AQUATIC ANIMAL INFORMATION:

No aquatic environmental information is available on this product.

MOBILITY

Mobility of this material has not been determined.

DEGRADABILITY

This product is completely biodegradable.

ACCUMULATION

Bioaccumulation of this product has not been determined.

SECTION 13. DISPOSAL CONSIDERATIONS

Processing, use or contamination may change the waste management options.
Recycle / dispose of observing national, regional, state, provincial and local
health, safety & pollution laws. If in doubt, contact appropriate agencies.



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SECTION 14. TRANSPORT INFORMATION

DOT SHIPPING NAME: None
DRUM LABEL: None
IATA / ICAO: None
IMO / IMDG: None
EMERGENCY RESPONSE GUIDEBOOK NUMBER: None
EPA REGULATION:
SARA SECTION 311/312 HAZARDS: None Known

SECTION 15. REGULATORY INFORMATION

All components of this product are on the TSCA list.
This material contains no known products restricted under SARA Title III, Section 313 in amounts greater or equal to 1%.

INTERNATIONAL REGULATIONS

The components of this product are listed on the chemical inventories of the following countries:
Australia, Canada, China, Europe (EINECS), Japan, Korea, United Kingdom.

SECTION 16. OTHER INFORMATION

HAZARD RATINGS:

HEALTH (NFPA): 2, HEALTH (HMIS): 2, FLAMMABILITY: 0, REACTIVITY: 0
This information is intended solely for the use of individuals trained in the NFPA & HMIS hazard rating systems.

EMPLOYEE TRAINING

See Section 3 for Risk & Safety Statements. Employees should be made aware of all hazards of this material (as stated in this MSDS) before handling it.

NOTICE:

The supplier disclaims all expressed or implied warranties of merchantability or fitness for a specific use, with respect to the product or the information provided herein, except for conformation to contracted specifications. All information appearing herein is based upon data obtained from manufacturers and/or recognized technical sources. While the information is believed to be accurate, we make no representations as to its accuracy or sufficiency. Conditions of use are beyond our control, and therefore users are responsible for verifying the data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product. Users also assume all risks in regards to the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or process. Unless updated, this Material Safety Data Sheet is valid until 11/27/2010.

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