



Safety Data Sheet

NECi Superior Enzymes
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Nitrate Reductase Activity Kit

Section 1: Identification of the Supplier and Substance/Mixture

The active, nitrate reducing reagents are the enzyme **nitrate reductase** and the biological electron donor molecule, **NADH** (β -Nicotinamide adenine dinucleotide, reduced disodium salt hydrate).

Assay Buffer: 28 mM Potassium Phosphate @ pH 7.5, 0.025 mM EDTA (Ethylenediaminetetraacetic acid).

Color Reagent: Griess Reagents (less than 1 g each of Sulfanilamide and N-(1-Naphthyl)ethylenediamine Hydrochloride).

Section 2: Hazards Identification

Threshold Limit Value: varied, but below known limits as supplied in kits

None of these solutions are classed as hazardous. No UN/NA codes.

No applicable regulations for international transportation. No labels required.

Section 3: Composition and Information on Ingredients Substance

Common name, Chemical name, CAS number, Formula: **See Table Below**

Principal Hazardous Component: Biologic Activity:

Exposure Limits: Not established

We provide a full SDS for the Nitrate Reductase Enzyme. SDS for all chemicals included in the kits are available upon request.

Chemical Name	CAS Number	Chemical Formula	Quantity
Nitrate Reductase	9013-03-0	Complex Peptide	<1 microgram
NADH (β -Nicotinamide adenine dinucleotide, reduced disodium salt hydrate)	606-68-8	C ₂₁ H ₂₇ N ₇ Na ₂ O ₁₄ P ₂	<10 milligram
Potassium Phosphate, Monobasic	7778-77-0	KH ₂ PO ₄	<1 gram
EDTA (Ethylenediaminetetraacetic acid disodium salt dihydrate)	6381-92-6	C ₁₀ H ₁₄ N ₂ O ₈ .2Na.2H ₂ O	<1 milligram
Potassium Nitrate	7757-79-1	KNO ₃	<1 gram
Glycerol	56-81-5	C ₃ H ₈ O ₃	<1 gram
PVPP (Poly(vinylpolypyrrolidone))	25249-54-1	C ₆ H ₉ NO	5 grams
Zinc Acetate	5970-45-6	Zn(C ₂ H ₃ O ₂) ₂	<1 gram
L-Cysteine hydrochloride	345909-32-2	C ₃ H ₇ NO ₂ S.HCl	<1 gram
Sulfanilamide	63-74-1	C ₆ H ₈ N ₂ O ₂ S	<1 gram
NED (N-(1-Naphthyl) ethylenediamine Hydrochloride)	1465-25-4	C ₁₂ H ₁₄ N ₂	<100 milligram

Section 4: First Aid Measures

Enzymes/Proteins may cause allergic reactions in certain sensitive individuals. Any chemical may cause skin or eye irritation. Avoid contact with Color Reagent.

Inhalation: Remove affected individual from source, then seek medical attention.

Eyes: Remove contact lenses if present. Flush thoroughly with saline or water. Contact physician if irritation or redness persists.

Skin: Remove contaminated clothing, wash material from skin using soap and water. Contact physician if irritation develops. Clean clothing before reuse.

Ingestion: May be harmful if swallowed. Obtain medical attention as required.

Section 5: Fire Fighting Measures

No special fire fighting equipment, media, or clothing is required.

Auto-ignition temperature: N/A **Flash Point:** N/A **Flammable Limits in Air (% by volume):** N/A

Unusual fire or Explosion Hazards: N/A **Stability:** Degradation products are not hazardous

Section 6: Accidental Release Measures

Wear appropriate protective equipment for storage and when handling. No additional precautions are required.

If Released or Spilled: Wear approved goggles and protective gloves. Collect spilled powders or solids into waste container for disposal. Avoid physical contact during removal, especially any dust. Use normal cleanup procedures for liquid spills. Wash area thoroughly with water. Wash contaminated clothing prior to reuse.

Waste Disposal: Dispose of waste in accordance with all applicable Federal, State, and Local regulations.

Section 7: Handling and Storage

Refer to product label for storage conditions. Store lyophilized and freeze-dried proteins in a cool, dry area in tightly closed containers when not in use. Some proteins are temperature-sensitive: store at temperature suggested on label.

Handling: Wear appropriate protective equipment; see Section 8. Avoid generation of dust or aerosols.

Section 8: Exposure Controls and Personal Protection

Respiratory Protection: (approved dust mask or respirator) is advisable when handling a powdered form of a product in order to avoid breathing particulates. Wear protective gloves and goggles or safety glasses to prevent direct contact with skin or eyes. Sensitive individuals should wear protective clothing.

Ventilation: Advisable, standard vent fan and local exhaust as required.

Section 9: Physical and Chemical Properties

Appearance and Odor: Powders, white **Solubility in Water:** Soluble in water

Section 10: Stability and Reactivity

Stability: Stable **Hazardous Decomposition Products:** None Known **Hazardous Polymerization:** Will Not Occur

Section 11: Toxicological Information

Acute Overexposure: May cause skin, eye, or respiratory irritation upon contact

Chronic Overexposure: May cause allergic reactions in certain sensitive individuals

The toxicological properties of this material have not been fully investigated. Always follow Good Laboratory and Industrial Hygiene Practices and wear personal protective equipment when handling chemicals.

Section 12: Ecological Information

Environmental Hazard: None Known

Section 13: Disposal Considerations

Dispose of waste in accordance with all Local, State, and Federal regulations. Chemical residues are generally classified as special waste: therefore transportation, storage, treatment, and disposal must be conducted in compliance with all applicable regulations. Rinse empty containers thoroughly before recycling.

Section 14: Transport Information

Proper Shipping Name: Not regulated **Hazard Class:** N/A **Packaging Group:** N/A

Reportable Quantity: N/A **Labels Required:** N/A

International Transportation Requirements: Not Regulated **UN/NA Code:** N/A

Section 15: Regulatory Information

US Federal and State: Materials are exempt for the US Environmental Protection Agency Toxic Controlled Substances Control Act (TSCA) inventory. Not known to be listed or regulated under any State jurisdiction.

International: EC: /R42/43, May cause sensitization by inhalation and skin contact. S36, wear suitable, protective clothing.

Section 16: Other Useful Information

The information provided in this SDS is believed to be correct but does not purport to be all inclusive. The information is presented as a guide. NECi assumes no liability for its accuracy or completeness. NECi does not assume liability for damages resulting from handling, use, and/or disposal of these products.