Material Safety Data Sheet

Canada
English

Section 1. Chemical product and company identification

Product name **NHS-activated Sepharose™ 4 Fast Flow, 25 ml**

Catalogue Number 17-0906-01

Material uses Industrial applications: Analytical chemistry. Research. Liquid chromatography.
Product type Liquid.
Validation date 19 August 2010
Print date 19 August 2010

Supplier
GE Healthcare UK Ltd
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In case of emergency			
	US	ChemTrec (US)	1-800-424-9300
	Canada	ChemTrec (US)	1-703-527-3887

2. Hazards identification

Physical state Liquid.
Odor Alcohol-like.

Emergency overview WARNING!

FLAMMABLE LIQUID AND VAPOR. CAUSES EYE AND SKIN IRRITATION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Flammable liquid. Irritating to eyes and skin. Keep away from heat, sparks and flame. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes Irritating to eyes.
Skin Irritating to skin.
Inhalation No known significant effects or critical hazards.
Ingestion No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects Contains material that can cause target organ damage.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects No known significant effects or critical hazards.
Target organs Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes, central nervous system (CNS).

Inhalation No specific data.
Ingestion No specific data.
Skin Adverse symptoms may include the following:
irritation
redness
Eyes Adverse symptoms may include the following:
pain or irritation
watering
redness

Medical conditions aggravated by over-exposure Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

See toxicological information (section 11)

3. Composition/information on ingredients

Name		CAS number	% by weight
propan-2-ol	67-63-0	100	
Sepharose (highly cross-linked agarose)	9012-36-6	-	

Section 4. First aid measures

Eye contact Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Section 5. Fire-fighting measures

Flammability of the product Flammable liquid. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Extinguishing media

Suitable Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable Do not use water jet.

Special exposure hazards 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Hazardous combustion products Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective equipment for fire-fighters Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

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 for cleaning up 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. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. 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.

Small spill Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Handling Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate

static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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

Product name	Exposure limits
propan-2-ol	**CA Alberta Provincial (Canada, 4/2009).** 15 min OEL: 984 mg/m³ 15 minute(s). 15 min OEL: 400 ppm 15 minute(s). 8 hrs OEL: 492 mg/m³ 8 hour(s). 8 hrs OEL: 200 ppm 8 hour(s). **CA British Columbia Provincial (Canada, 7/2009).** STEL: 400 ppm 15 minute(s). TWA: 200 ppm 8 hour(s). **CA Ontario Provincial (Canada, 8/2008).** STEV: 400 ppm 15 minute(s). TWAEV: 200 ppm 8 hour(s). **CA Quebec Provincial (Canada, 6/2008).** STEV: 1230 mg/m³ 15 minute(s). STEV: 500 ppm 15 minute(s). TWAEV: 983 mg/m³ 8 hour(s). TWAEV: 400 ppm 8 hour(s).

Recommended monitoring procedures If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures 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.

Personal protection

Respiratory A respirator is not needed under normal and intended conditions of product use.

Hands 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.

Eyes 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 or dusts.

Skin 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.

Environmental exposure controls 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.

Section 9. Physical and chemical properties

Physical state Liquid.

Flash point Closed cup: 12°C (53.6°F)
Open cup: 11.9°C (53.4°F)

Auto-ignition temperature 399°C (750.2°F)

Flammable limits Lower: 2%
Upper: 12.7%

Color solution : Colorless. / Suspension. : White. [Light]

Odor Alcohol-like.

Taste Bitter. / Burning.

Volatility 100% (v/v)

Odor threshold 40 to 200 ppm

VOC 100 % (w/w) [ISO 11890-1]

Ionicity (in water) Non-ionic.

Solubility Easily soluble in the following materials: cold water and hot water.

Section 10. Stability and reactivity

Stability The product is stable.

Materials to avoid Reactive or incompatible with the following materials:
oxidizing materials

Hazardous polymerization Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions of reactivity Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
Flammable in the presence of the following materials or conditions: oxidizing materials.
Non-flammable in the presence of the following materials or conditions: shocks and mechanical impacts, reducing materials, combustible materials, organic materials, metals, acids, alkalis and moisture.
Not considered to be a product presenting a risk of explosion.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
propan-2-ol	LD50 Dermal	Rabbit	12800 mg/kg	-
	LD50 Intraperitoneal	Rat	2735 mg/kg	-
	LD50 Intravenous	Rat	1088 mg/kg	-
	LD50 Oral	Rat	5045 mg/kg	-
	LD50 Oral	Rat	5000 mg/kg	-
	TDLo Intraperitoneal	Rat	800 mg/kg	-
	LC50 Inhalation Gas.	Rat	16000 ppm	8 hours

Conclusion/Summary Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
propan-2-ol	A4	3	-	-	-	-

Synergistic products Not available.

Section 12. Ecological information

Environmental effects No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
propan-2-ol	-	Acute LC50 11130000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 4 to 8 weeks - 1.1 to 3.1 cm	96 hours
	-	Acute LC50 10400000 to 10600000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 29 days - 20 mm - 0.103 g	96 hours
	-	Acute LC50 9640000 to 10000000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 31 days - 20.6 mm - 0.117 g	96 hours
	-	Acute LC50 6550000 to 7450000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 31 days - 17.4 mm - 0.082 g	96 hours
	-	Acute LC50 4200000 ug/L Fresh water	Fish - Harlequinfish, red rasbora - Rasbora heteromorpha - 1 to 3 cm	96 hours
	-	Acute LC50 1400000 to 1950000 ug/L Marine water	Crustaceans - Common shrimp, sand shrimp - Crangon crangon	48 hours
	-	Acute LC50 >1400000 ug/L	Fish - Western mosquitofish - Gambusia affinis - 20 to 30 mm	96 hours

Conclusion/Summary Not available.

Octanol/water partition coefficient	Not available.
Bioconcentration factor	Not available.
Toxicity of the products of biodegradation	The product itself and its products of degradation are not toxic.
Other adverse effects	No known significant effects or critical hazards.

Section 13. Disposal considerations

Waste disposal The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

RCRA classification D001

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

International transport regulations

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	UN1219	ISOPROPANOL	3	II		-
TDG Classification	UN1219	ISOPROPANOL	3	II		-
Mexico Classification	UN1219	ISOPROPANOL	3	II		-
ADR/RID Class	UN1219	ISOPROPANOL	3	II		-
IMDG Class	UN1219	ISOPROPANOL	3	II		-
IATA Class	UN1219	ISOPROPANOL	3	II		-

Section 15. Regulatory information

WHMIS (Canada) Class B-2: Flammable liquid
Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Isopropyl alcohol
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

EU regulations

Hazard symbol or symbols	
Risk phrases	R11- Highly flammable. R36- Irritating to eyes. R67- Vapors may cause drowsiness and dizziness.
Safety phrases	S7- Keep container tightly closed. S16- Keep away from sources of ignition - No smoking. S24/25- Avoid contact with skin and eyes. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

International regulations

International lists	**Australia inventory (AICS)**: All components are listed or exempted. **China inventory (IECSC)**: All components are listed or exempted. **Japan inventory**: All components are listed or exempted. **Korea inventory**: All components are listed or exempted. **New Zealand Inventory of Chemicals (NZIoC)**: All components are listed or exempted. **Philippines inventory (PICCS)**: All components are listed or exempted.

Section 16. Other information

The customer is responsible for determining the PPE code for this material.

Indicates information that has changed from previously issued version.

History

Date of printing	19 August 2010	**Date of previous issue**	16 August 2010
Date of issue	19 August 2010	**Version**	6.03

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.