GE Healthcare

Material Safety Data Sheet

Canada
English

Section 1. Chemical product and company identification

Product name **Equilibration Solution; part of 'DeStreak™ Starter Kit'**

Catalogue Number 11-0008-35

Material uses Industrial applications: Analytical chemistry. Research.

Product type Liquid.

Validation date 21 August 2009

Print date 21 August 2009

Supplier

GE Healthcare UK Ltd
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Little Chalfont
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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 Odorless.

Emergency overview WARNING!

HARMFUL IF SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

Harmful if swallowed. May be harmful if absorbed through skin. Irritating to eyes, respiratory system and skin. Do not breathe vapor or mist. Do not ingest. Do not get in eyes. Avoid contact with 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 Harmful in contact with skin. Irritating to skin.

Inhalation Irritating to respiratory system. Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Ingestion Toxic if swallowed.

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: kidneys, upper respiratory tract, skin, eye, lens or cornea.

Inhalation Adverse symptoms may include the following:
respiratory tract irritation
coughing

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
Hydroxyethyl disulfide	1892-29-1	1.52	Not available.
Glycerol	56-81-5	26.1	Not available.

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Section 5. Fire fighting measures

Flammability of the product
In a fire or if heated, a pressure increase will occur and the container may burst.

Extinguishing media

Suitable
Use an extinguishing agent suitable for the surrounding fire.

Not suitable
None known.

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.

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. Do not breathe 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). 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 or absorb with an inert dry material and place in an appropriate waste disposal container. 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 get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage

Store in accordance with local regulations. 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. 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
urea	**AIHA WEEL (United States, 1/2007).** TWA: 10 mg/m³ 8 hour(s).
glycerol	**CA Alberta Provincial (Canada, 10/2006).** 8 hrs OEL: 10 mg/m³ 8 hour(s). Form: Mist **CA British Columbia Provincial (Canada, 7/2007).** TWA: 10 mg/m³ 8 hour(s). Form: Mist TWA: 3 mg/m³ 8 hour(s). Form: Respirable mist **CA Ontario Provincial (Canada, 3/2007).** TWAEV: 10 mg/m³ 8 hour(s). Form: mist **CA Quebec Provincial (Canada, 12/2006).** TWAEV: 10 mg/m³ 8 hour(s). Form: mist

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. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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.

Color Blue.

Odor Odorless.

pH 8.8

Volatility 1.52% (w/w)

VOC 15.2 (g/l).

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 No specific data.

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

Conditions of reactivity

Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge, heat, shocks and mechanical impacts, oxidizing materials, 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
Tris(hydroxymethyl)aminomethane	LD50 Intravenous	Rat	1800 mg/kg	-
	LD50 Oral	Rat	5900 mg/kg	-
sodium dodecyl sulphate	LD50 Intraperitoneal	Rat	210 mg/kg	-
	LD50 Intravenous	Rat	118 mg/kg	-
	LD50 Oral	Rat	1288 mg/kg	-
	LDLo Dermal	Rabbit	10 g/kg	-
2,2'-dithiobisethanol	LD50 Oral	Rat	173 mg/kg	-
urea	LD50 Intraperitoneal	Rat	>5 g/kg	-
	LD50 Intratracheal	Rat	567 mg/kg	-
	LD50 Intravenous	Rat	5300 mg/kg	-
	LD50 Oral	Rat	8471 mg/kg	-
	LD50 Subcutaneous	Rat	8200 mg/kg	-
glycerol	LD50 Dermal	Rabbit	>10 g/kg	-
	LD50 Intraperitoneal	Rat	4420 mg/kg	-
	LD50 Intravenous	Rat	5566 mg/kg	-
	LD50 Oral	Rat	12600 mg/kg	-
	LD50 Subcutaneous	Rat	100 mg/kg	-
	LDLo Intramuscular	Rat	10 mg/kg	-
	TDLo Intramuscular	Rat	8 mL/kg	-
	TDLo Intramuscular	Rat	5000 mg/kg	-

Conclusion/Summary Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Not available.						

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
sodium dodecyl sulphate	-	Acute EC50 51.5 to 52.3 mg/L Fresh water	Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
	-	Acute EC50 9.8 to 10.4 mg/L Fresh water	Daphnia - Water flea - Daphnia obtusa - Neonate	48 hours
	-	Acute LC50 15.1 to 15.51 mg/L Marine water	Fish - Eastern mosquitofish - Gambusia holbrooki - 2 to 2.5 cm	96 hours
	-	Acute LC50 12.2 to 12.24 mg/L Marine water	Crustaceans - Brine shrimp - Artemia parthenogenetica - Nauplii	48 hours
	-	Acute LC50 40 to 50 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia	48 hours
	-	Acute LC50 5.6 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 5.4 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 5.1 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 5 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 4.2 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
	-	Acute LC50 77 ppm Marine water	Crustaceans - Daggerblade grass shrimp -	48 hours

		Palaemonetes pugio - Adult	
-	Acute LC50 75 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult - 0.307 g	48 hours
-	Acute LC50 72 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
-	Acute LC50 70 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
-	Acute LC50 66 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult - 0 to 58 g	48 hours
-	Acute LC50 112 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
-	Acute LC50 >90 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
-	Acute LC50 90 ppm Marine water	Crustaceans - Daggerblade grass shrimp - Palaemonetes pugio - Adult	48 hours
-	Acute LC50 4600 to 6400 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 3300 to 4300 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 1800 to 2600 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 1400 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex - Neonate	48 hours
-	Acute LC50 620 ug/L Fresh water	Fish - Carp, hawk fish - Cirrhinus mrigala - LARVAE - 2 days - 4.5 mm - 51 mg	96 hours
-	Acute LC50 590 ug/L Fresh water	Fish - Carp, hawk fish - Cirrhinus mrigala - LARVAE - 2 days - 4.5 mm - 51 mg	96 hours
-	Acute LC50 24.9 to 31.7 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 403 mg	96 hours
-	Acute LC50 19.129 to 19.235 mg/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
-	Acute LC50 4800 to 6500 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
-	Chronic NOEC 7.9 mg/L Fresh water	Daphnia - Water flea - Daphnia magna - Juvenile (Fledgling, Hatchling, Weanling)	48 hours
-	Chronic NOEC 19.5 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling) - 403 mg	96 hours

urea		-	Acute EC50 6573.1 to 7061 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours
		-	Acute EC50 3910000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
		-	Acute LC50 83700 to 86900 ug/L Fresh water	Fish - Rohu - Labeo rohita - FRY - 0.8 g	96 hours
		-	Acute LC50 72600 to 75900 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours
		-	Acute LC50 66800 to 70500 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours
		-	Acute LC50 65800 to 70200 ug/L Fresh water	Fish - Rohu - Labeo rohita - FRY - 0.8 g	96 hours
		-	Acute LC50 64700 to 69200 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours
		-	Acute LC50 23400 to 26500 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours
		-	Acute LC50 22500 ug/L	Fish - Mozambique tilapia - Tilapia mossambica	96 hours
		-	Acute LC50 16700 to 19600 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours
		-	Acute LC50 90100 to 93900 ug/L Fresh water	Fish - Rohu - Labeo rohita - FRY - 0.8 g	96 hours
		-	Acute LC50 5000 ug/L Fresh water	Fish - Giant gourami - Colisa fasciata - Fingerling	96 hours
glycerol		-	Acute LC50 54 to 57 ml/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 0.9 g	96 hours

Conclusion/Summary Not available.

Octanol/water partition coefficient Not available.

Bioconcentration factor Not available.

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 Not available.

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

Not classified.

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Section 15. Regulatory information

WHMIS (Canada)
Class D-1B: Material causing immediate and serious toxic effects (Toxic).
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: None of the components are listed.
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
At least one component is not listed in DSL but all such components are listed in NDSL.

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
R36/37/38- Irritating to eyes, respiratory system and skin.

Safety phrases
Not applicable.

International regulations

International lists
Australia inventory (AICS): All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Japan inventory (ENCS): All components are listed or exempted.
Japan inventory (ISHL): Not determined.
Korea inventory (KECI): 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	21 August 2009	**Date of previous issue**	18 July 2006
Date of issue	21 August 2009	**Version**	3

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.