

Material Safety Data Sheet

Canada

English

Section 1. Chemical product and company identification

Product name ECF™ Substrate Dilution Buffer; part of 'ECF Western Blotting Reagent Pack, Mouse, 2500 cm² Membrane'

Catalogue Number RPN5781



Component Number 1067880

Material uses Industrial applications: Analytical chemistry. Research.

Product type Liquid.

Validation date 20 May 2011

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Supplier GE Healthcare UK Ltd
Amersham Place
Little Chalfont
Buckinghamshire HP7 9NA
England
+44 0870 606 1921

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 Not available.

Emergency overview WARNING!

CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.

Precautionary measures Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep container tightly closed. Wash thoroughly after handling.

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

Potential acute health effects

Eyes	Severely irritating to eyes. Risk of serious damage to eyes.
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	Harmful if swallowed.

Potential chronic health effects

Chronic effects	Contains material that may cause target organ damage, based on animal data.
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, liver, upper respiratory tract, skin, eyes.
Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing



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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

<u>Name</u>	<u>CAS number</u>	<u>% by weight</u>
diethanolamine	111-42-2	17.6

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. 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.

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.
<u>Extinguishing media</u>	
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. 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). 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. 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. Remove contaminated clothing and protective equipment before entering eating areas. 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. 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

diethanolamine

Exposure limits

CA Ontario Provincial (Canada, 7/2010). Absorbed through skin.TWA: 1 mg/m³ 8 hour(s). Form: Inhalable fraction and vapor**CA British Columbia Provincial (Canada, 10/2009). Absorbed through skin.**TWA: 1 mg/m³ 8 hour(s). Form: Inhalable vapour and aerosol**CA Alberta Provincial (Canada, 4/2009). Absorbed through skin.**8 hrs OEL: 2 mg/m³ 8 hour(s).**CA Quebec Provincial (Canada, 6/2008). Absorbed through skin.**

TWAEV: 3 ppm 8 hour(s).

TWAEV: 13 mg/m³ 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. 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.
Flash point	Product does not sustain combustion.]
Color	Colorless.
Volatility	17.6% (v/v)
Solubility	Easily soluble in the following materials: cold water and hot water.

Section 10. Stability and reactivity

Stability	The product is stable.
Conditions to avoid	No specific data.
Materials to avoid	No specific data.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions 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.



Non-explosive 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.

Section 11. Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
diethanolamine	LD50 Dermal	Rabbit	7640 uL/kg	-
	LD50 Intramuscular	Rat	1500 mg/kg	-
	LD50 Intraperitoneal	Rat	120 mg/kg	-
	LD50 Intravenous	Rat	778 mg/kg	-
	LD50 Oral	Rat	620 uL/kg	-
	LD50 Subcutaneous	Rat	2200 mg/kg	-

Conclusion/Summary Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
diethanolamine	A3	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
diethanolamine	-	Acute EC50 72.92 to 86.04 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <24 hours	48 hours
	-	Acute EC50 72.92 mg/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate - <24 hours	48 hours
	-	Acute LC50 >540 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
	-	Acute LC50 4710000 to 4980000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - 31 days - 19.9 mm - 0.12 g	96 hours
	-	Acute LC50 1550000 to 1990000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 30 to 35 days - 14.9 mm - 76.8 mg	96 hours
	-	Acute LC50 1480000 to 1630000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - FRY - 10 to 15 days - 9.5 mm - 11.6 mg	96 hours
	-	Acute LC50 1400000 ug/L Fresh water	Fish - Western mosquitofish - Gambusia affinis - Adult	96 hours
	-	Acute LC50 1370000 to 1580000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Sub-adult - 65 to 94 days - 28 mm - 391 mg	96 hours
	-	Acute LC50 >100000 ug/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling,	96 hours



-	Acute LC50 100000 ug/L Fresh water	Weanling) - 0.2 to 0.5 g Fish - Fathead minnow - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) - 0.2 to 0.5 g	96 hours
-	Acute LC50 55000 to 68000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <=24 hours	48 hours
-	Acute LC50 31000 to 36200 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours
-	Acute LC50 30400 to 47800 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours
-	Acute LC50 30100 to 39100 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours
-	Acute LC50 28800 to 34600 ug/L Fresh water	Daphnia - Water flea - Ceriodaphnia dubia - Neonate	48 hours
-	Acute LC50 2640 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
-	Acute LC50 2150 ug/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
-	Chronic NOEC 540 ppm Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling) - 8 to 15 mm	96 hours
-	Chronic NOEC <24000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - <=24 hours	48 hours
Conclusion/Summary		Not available.	
Partition coefficient: n-octanol/water		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. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. 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. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. 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

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.

WHMIS (Canada)

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: Diethanolamine

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.

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.

Chemical Weapons Convention List Schedule I Chemicals

 Not listed

Chemical Weapons Convention List Schedule II Chemicals

 Not listed

Chemical Weapons Convention List Schedule III Chemicals

 Not listed

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

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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.



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