GE Healthcare

# Material Safety Data Sheet

Canada
English

## Section 1. Chemical product and company identification

**Product name**

**Cross-linker; part of 'AlkPhos Direct™ Labelling module, For 5,000 cm² membrane'**

**Catalogue Number**

RPN3681

**Component Number**

NIF1348

**Material uses** Industrial applications: Analytical chemistry. Research.

**Product type** Liquid.

**Validation date** 1 April 2016

**Print date** 01 April 2016

**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.

**Color** Colorless.

**Odor** Pungent. [Slight]

**Signal word** DANGER!

**Hazard statements** FLAMMABLE LIQUID AND VAPOR. COMBUSTIBLE. CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER.

**Precautionary measures** Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Do not get in eyes. Do not get on skin. Do not eat, drink or smoke when using this product. Avoid contact with eyes, skin and clothing. Keep away from heat, sparks and flame. Keep container tightly closed. Use personal protective equipment as required. Wash thoroughly after handling.

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

**Potential acute health effects**

**Eyes** Corrosive to eyes. Causes burns.

**Skin** Corrosive to the skin. Causes burns. Toxic in contact with skin. May cause sensitization by skin contact.

**Inhalation** Toxic by inhalation. Corrosive to the respiratory system. May cause sensitization by inhalation.

**Ingestion** Toxic if swallowed. May cause burns to mouth, throat and stomach.

**Potential chronic health effects**

**Chronic effects** Contains material that can cause target organ damage. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity** Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

**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: lungs, the nervous system, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea. |
| **Inhalation** | Adverse symptoms may include the following:<br>respiratory tract irritation<br>coughing<br>wheezing and breathing difficulties<br>asthma |
| **Ingestion** | Adverse symptoms may include the following:<br>stomach pains |
| **Skin** | Adverse symptoms may include the following:<br>pain or irritation<br>redness<br>blistering may occur |
| **Eyes** | Adverse symptoms may include the following:<br>pain<br>watering<br>redness |
| **Medical conditions aggravated by over-exposure** | Pre-existing respiratory and skin disorders and disorders involving any other 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 |
|---|---|---|---|---|
| methanol | 67-56-1 | 10 | - | |
| Formaldehyde, solution | 50-00-0 | 4 - 5 | - | |

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

## 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** | 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. |
| **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. |
| **Special remarks on fire hazards** | No additional remark. |

## 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. 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. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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. Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. 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. 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

**Occupational exposure limits**

| Ingredient | List name | TWA (8 hours) ppm | TWA (8 hours) mg/m³ | TWA (8 hours) Other | STEL (15 mins) ppm | STEL (15 mins) mg/m³ | STEL (15 mins) Other | Ceiling ppm | Ceiling mg/m³ | Ceiling Other | Notations |
|---|---|---|---|---|---|---|---|---|---|---|---|
| methanol | US ACGIH 6/2013 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] [A] |
| | AB 4/2009 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| | BC 7/2013 | 200 | - | - | 250 | - | - | - | - | - | [1] |
| | ON 1/2013 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| | QC 12/2012 | 200 | 262 | - | 250 | 328 | - | - | - | - | [1] |
| Formaldehyde, solution | US ACGIH 6/2013 | - | - | - | - | - | - | 0.3 | 0.37 | - | [3] [B] |
| | AB 4/2009 | 0.75 | 0.9 | - | - | - | - | 1 | 1.3 | - | |
| | BC 7/2013 | 0.3 | - | - | - | - | - | 1 | - | - | [3] |
| | ON 1/2013 | - | - | - | 1 | - | - | 1.5 | - | - | |
| | QC 12/2012 | - | - | - | 2 | 3 | - | - | - | - | |

[1]Absorbed through skin. [3]Skin sensitization
**Notes:** [A]Substances for which there is a Biological Exposure Index or Indices [B]Substance identified by other sources as a suspected or confirmed human carcinogen. Refers to Appendix A -- Carcinogens. 2000 Adoption.

**Consult local authorities for acceptable exposure limits.**

**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. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

**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. Contaminated work clothing should not be allowed out of the workplace. 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. |
| **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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. |
| **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.<br>When there is a risk of ignition from static electricity, wear anti-static protective clothing.<br>For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. |
| **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. |
| **Other protection** | Not available. |
| **Personal protective equipment (Pictograms)** | Not available. |

## Section 9. Physical and chemical properties

| | |
|---|---|
| **Physical state** | Liquid. |
| **Flash point** | Closed cup: 37.8 to 61°C (100 to 141.8°F) |
| **Burning time** | Not applicable. |
| **Burning rate** | Not applicable. |
| **Color** | Colorless. |
| **Odor** | Pungent. [Slight] |
| **SADT** | Not available. |
| **Solubility** | Easily soluble in the following materials: cold water, hot water and methanol. |

## Section 10. Stability and reactivity

| | |
|---|---|
| **Chemical stability** | The product is stable. |
| **Conditions to avoid** | Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| **Incompatible materials** | Reactive or incompatible with the following materials:<br>oxidizing materials |
| **Possibility of hazardous reactions** | Under normal conditions of storage and use, hazardous reactions will not occur. |

## Section 11. Toxicological information

**Acute toxicity**

| Product/ingredient name | Result | Species | Dose | Exposure |
|---|---|---|---|---|
| methanol | LC50 Inhalation Gas. | Rat | 145000 ppm | 1 hours |
| | LC50 Inhalation Gas. | Rat | 64000 ppm | 4 hours |
| | LD50 Dermal | Rabbit | 15800 mg/kg | - |
| | LD50 Oral | Rat | 5600 mg/kg | - |
| Formaldehyde, solution | LD50 Dermal | Rabbit | 270 mg/kg | - |
| | LD50 Oral | Rat | 100 mg/kg | - |

**Conclusion/Summary** Harmful if swallowed or in contact with skin.

**Chronic toxicity**

Not available.

**Conclusion/Summary** Not available.

**Irritation/Corrosion**

Not available.

**Conclusion/Summary** Not available.

**Sensitizer**

Not available.

**Conclusion/Summary**

**Skin** May cause an allergic skin reaction.

**Carcinogenicity**

Not available.

**Conclusion/Summary** May cause cancer.

**Classification**

| Product/ingredient name | ACGIH | IARC | EPA | NIOSH | NTP | OSHA |
|---|---|---|---|---|---|---|
| Formaldehyde, solution | A2 | 1 | B | + | Known to be a human carcinogen. | + |

**Mutagenicity**

Not available.

**Conclusion/Summary** Suspected of causing genetic defects.

**Teratogenicity**

Not available.

**Conclusion/Summary** Not available.

**Reproductive toxicity**

Not available.

**Conclusion/Summary** Not available.

**Synergistic products** Not available.

## Section 12. Ecological information

**Environmental effects** No known significant effects or critical hazards.

**Aquatic ecotoxicity**

| Product/ingredient name | Result | Species | Exposure |
|---|---|---|---|
| Methanol | Acute EC50 16.912 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| | Acute EC50 10000000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 2500000 µg/l Marine water | Crustaceans - Crangon crangon - Adult | 48 hours |
| | Acute LC50 100 mg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Chronic NOEC 9.96 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| Formaldehyde, solution | Acute EC50 3.48 mg/l Fresh water | Algae - Desmodesmus subspicatus | 72 hours |
| | Acute EC50 12.98 mg/l Fresh water | Crustaceans - Ceriodaphnia dubia - Neonate | 48 hours |
| | Acute EC50 5800 µg/l Fresh water | Daphnia - Daphnia pulex - Neonate | 48 hours |
| | Acute LC50 1.41 ppm Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| | Chronic NOEC 953.9 ppm Fresh water | Fish - Oncorhynchus tshawytscha - Egg | 43 days |

**Conclusion/Summary** Not available.

**Persistence/degradability**

**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. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**RCRA classification** Not available.

**United States - RCRA Toxic hazardous waste "U" List**

| Ingredient | CAS # | Status | Reference number |
|---|---|---|---|
| Methanol (I); Methyl alcohol (I) | 67-56-1 | Listed | U154 |
| Formaldehyde | 50-00-0 | Listed | U122 |

**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

| Regulatory information | UN number | Proper shipping name | Classes | PG* | Label | Additional information |
|---|---|---|---|---|---|---|
| **DOT Classification** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) RQ (Formaldehyde, solution, methanol) | 3 | III |  | **Reportable quantity** 2222.2 lbs / 1008.9 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. |
| **TDG Classification** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) | 3 | III |  | - |
| **Mexico Classification** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) | 3 | III |  | - |
| **ADR/RID Class** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) | 3 | III |  | - |
| **IMDG Class** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) | 3 | III |  | - |
| **IATA-DGR Class** | UN1987 | ALCOHOLS, N.O.S. (methanol, mixture) | 3 | III |  | - |

PG* : Packing group

## 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 B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-1A: Material causing immediate and serious toxic effects (Very toxic).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

**Canadian lists**

**Canadian NPRI** The following components are listed: Methanol; Formaldehyde

**CEPA Toxic substances** The following components are listed: Formaldehyde

**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.
**Malaysia Inventory (EHS Register)**: 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.
**Taiwan inventory (CSNN)**: Not determined.

**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**

| | | | |
|---|---|---|---|
| **Date of printing** | 01 April 2016 | **Date of previous issue** | 13 January 2016 |
| **Date of issue** | 01 April 2016 | **Version** | 6.01 |

**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.