

Revision date: 09/17/2009
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 Version: 1

Material Safety Data Sheet



1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

Product name: 5-Bromo-2'-deoxy-uridine Labeling and Detection Kit II
Product number: 1299964
Global material number: 11299964001
Business area: Roche Applied Sciences
Product line: Not applicable
Supplier: Roche Diagnostics
 9115 Hague Road
 Indianapolis, IN 46250
 Site Phone Number: 1-800-428-5074

Emergency telephone number:
 CHEMTREC:
 1-800-424-9300 (U.S. or Canada)
 1-703-527-3887 (International)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Description 1: Bottle 1: BrdU Labeling Reagent

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
5-Bromo-2'-Deoxy-uridine	59-14-3	0.1-<1	NA	NA	NA	NA

Description 2: Bottles 2-4: Washing Buffer Concentrate, Incubation Buffer, Anti-BrdU with nucleases

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Kathon CG or Proclin [Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)]	55965-84-9	0.1-<1	NA	NA	NA	NA

Description 3: Bottle 5: Anti-mouse Ig-alkaline Phosphatase

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Sodium azide	26628-22-8	0.1-<1	NA	NA	NA	0.29 mg/m ³ Ceiling 0.11 ppm Ceiling

Description 4: Bottle 6: NBT

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
Nitro blue tetrazolium chloride (NBT)	298-83-9	5 - 10	NA	NA	NA	NA
Dimethylformamide	68-12-2	70 - 80	10 ppm 30 mg/m ³ prevent or reduce skin absorption	NA	10 ppm Skin - potential significant contribution to overall exposure by the cutaneous route	NA

Description 5: Bottle 7: BCIP

Components	CAS Number	Weight %	OSHA PEL:	OSHA STEL:	ACGIH TLV:	ACGIH STEL:
5-Bromo-4-chloro-3-indolyl phosphate, 4-toluidine salt	6578-06-9	5 - 10	NA	NA	NA	NA
Dimethylformamide	68-12-2	95-100	10 ppm 30 mg/m ³ prevent or reduce skin absorption	NA	10 ppm Skin - potential significant contribution to overall exposure by the cutaneous route	NA

3. HAZARDS IDENTIFICATION

Emergency Overview

- Dimethylformamide - The major effect of overexposure to this agent is liver toxicity. Causes liver, kidney, cardiovascular system and central nervous system disorders. The symptoms listed may be experienced by inhalation, ingestion, or skin absorption. May cause abdominal pain, loss of appetite, nausea, weakness, dizziness, headache, constipation, vomiting, diarrhea, increased blood pressure anxiety, and palpitations. A flushing of the face and skin may occur, especially with coincident ingestion of alcoholic beverages.

3. HAZARDS IDENTIFICATION

NFPA Ratings:

Bottles 6 and 7 Health= 3 Flammability= 2 Reactivity= 0 Special= T, R

Bottles 2, 3, 4, and 5 Health= 1 Flammability= 0 Reactivity= 0 Special= I

All other bottles Health= 0 Flammability= 0 Reactivity= 0

Special Definitions: A=Allergen CA=Carcinogen CO=Corrosive F=Flammable H=Harmful I=Irritant Ox=Oxidizer PB=Potential Biohazard R=Reproductive S=Sensitizer T=Toxic T+=Highly Toxic W=Water Reactive

Principle routes of exposure:

Ingestion, inhalation, skin and/or eye contact.

Inhalation:

Avoid breathing vapors or mists. Irritating to respiratory system. DIMETHYLFORMAMIDE- Symptoms may include coughing, shortness of breath. Causes liver, kidney, cardiovascular system and central nervous system disorders. May cause abdominal pain, loss of appetite, nausea, weakness, dizziness, headache, constipation, vomiting, diarrhea, increased blood pressure anxiety, and palpitations. A flushing of the face and skin may occur, especially with coincident ingestion of alcoholic beverages.

Ingestion:

DIMETHYLFORMAMIDE - Symptoms parallel inhalation. Has a fatal estimated ingestion dose at 10 grams. Other bottles may cause gastrointestinal irritation, nausea, vomiting, and diarrhea.

Skin contact:

DIMETHYLFORMAMIDE - Symptoms include redness, itching and pain. Can cause skin problems. Absorption through the skin can readily occur, resulting in symptoms paralleling inhalation. Other bottles may cause slight skin irritation.

Eye contact:

DIMETHYLFORMAMIDE - Causes irritation, redness, and pain. May cause severe irritation and blurred vision. Other bottles may cause eye irritation.

Sensitization or Odor threshold:

The following chemical(s) may cause sensitization, be absorbed via skin, and/or has an odor threshold for detection:

Components	ACGIH - Sensitizer Designation:	Germany (DFG) - Skin/Sensitizers:	Switzerland - Sensitizers:	AIHA - Odor Threshold Values:
Dimethylformamide				Listed

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Dimethylformamide				Listed

Medical conditions aggravated by exposure:

Persons with pre-existing skin, eye, nervous system disorders, impaired liver, kidney, or pulmonary function may be more susceptible to the effects of this substance.

Additional information:

None

4. FIRST AID MEASURES

Inhalation:

Consult a physician. Move to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Skin contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Ingestion:

Call a physician immediately. Do not induce vomiting without medical advice. Drink 1 or 2 glasses of water.

Eye contact:

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Notes to physician:

None determined

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media:

Use dry chemical, CO₂, water spray or "alcohol" foam.

Unusual hazards:

Combustible material.

Special protective equipment for firefighters:

In the event of fire, wear self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment. Evacuate personnel to safe areas. Remove all sources of ignition.

Environmental precautions:

Prevent further leakage or spillage if safe to do so. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Do not let product enter drains.

6. ACCIDENTAL RELEASE MEASURES

Methods for cleaning up: Never return spills in original containers for re-use. Soak up with oil absorbent material. Sweep up or vacuum (if powder) or soak up with inert absorbent material (if liquid), then place into a suitable clean, dry, closed container, and label for disposal.

7. HANDLING AND STORAGE

Handling: Protect from contamination. Wear personal protective equipment.
Storage: Keep containers dry and tightly closed to avoid moisture absorption and contamination.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

Personal Protective Equipment

Respiratory protection: Respiratory protection is not required under normal use of this product. If respiratory protection is needed, follow the OSHA regulation, 29CFR1910.134. Always use a NIOSH approved respirator when necessary.

Hand protection: Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.

Skin and body protection: Wear appropriate body protection to prevent skin contact.

Eye protection: Wear appropriate eye protection to prevent eye contact.

Hygiene measures: When using, do not eat, drink or smoke. Keep away from food and drink. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state: Liquid.
Solubility in water: Soluble.
Autoignition temperature: 440 C (for DMF)
Flash point: >58C/136F (for DMF)
LEL (%): 2.2 (for DMF)
UEL (%): 16 (for DMF)

10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage conditions.
Polymerization: None under normal processing.
Hazardous decomposition products: Thermal decomposition can lead to release of irritating gases and vapours. Nitrogen oxides (nox). Carbon monoxide. Ammonia gas may be liberated at high temperatures. Carbon oxides. Hydrogen chloride. Bromine. Carbon tetrachloride. Strong oxidising agents. Strong acids. Strong bases. Halogenated compounds. Alkali metals.

Materials to avoid:

11. TOXICOLOGICAL INFORMATION

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
5-Bromo-2'-Deoxy-uridine	=8400 mg/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Kathon CG or Proclin [Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H -isothiazol-3-one (3:1)]	=53 mg/kg Oral LD50 Rat	

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Sodium azide	=20 mg/kg Dermal LD50 Rabbit =50 mg/kg Dermal LD50 Rat =27 mg/kg Oral LD50 Rat	eyes CNS skin CVS kidneys

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
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Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Nitro blue tetrazolium chloride (NBT)	=2 g/kg Oral LD50 Mouse	
Dimethylformamide	=200 mg/kg Oral LD50 Rat >3.2 g/kg Dermal LD50 Rat	liver kidneys CVS skin eyes respiratory system 500ppmIDLH

Components	NIOSH - Selected LD50s and LC50s:	NIOSH Pocket Guide - Target Organs:
Dimethylformamide	=200 mg/kg Oral LD50 Rat >3.2 g/kg Dermal LD50 Rat	liver kidneys CVS skin eyes respiratory system 500ppmIDLH

Inhalation: No additional data available
Skin: No additional data available
Oral: No additional data available
Mutagenic effects: No data is available on the product itself
Reproductive toxicity: Dimethylformamide may cause harm to the unborn child. Dimethylformamide has been linked with miscarriages, fetal death, and female reproductive effects in humans; and is in an unconfirmed human reproductive hazard. DMF has been embryotoxic, fetotoxic, or teratogenic in several species of experimental animals. The actual human reproductive hazard is unknown (REPROTEXT System, 2004).

Components	IARC Group 1	IARC Group 2A or 2B	IARC Group 3 or 4	NTP	OSHA Select Carcinogens
Dimethylformamide			Monograph 71 [1999] Monograph 47 [1989]		

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Dimethylformamide			Monograph 71 [1999] Monograph 47 [1989]		

12. ECOLOGICAL INFORMATION

Bioaccumulation: Not determined
Aquatic toxicity: No data is available on the product itself
Ecotoxicity effects: No data is available on the product itself

U.S. EPA, RCRA, CERCLA, SARA, or DGC information on persistent, bioaccumulative, and toxic chemicals (PBTs):
The following chemicals are listed under the U.S. EPA regulations of RCRA, CERCLA, SARA, or DGC:

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

14. TRANSPORT INFORMATION

Is product hazardous to ship? Yes.
Component(s) hazardous to ship: Bottles 6 and 7

DOT

Proper shipping name: Chemical Kit			
UN Number: UN 3316	Hazard class: 9	Subsidiary risk: Not applicable	Packing group: III

ICAO/IATA

Proper shipping name: Chemical Kit			
UN Number: UN 3316	Hazard class: 9	Subsidiary risk: Not applicable	Packing group: III

15. REGULATORY INFORMATION

U.S. Regulations:

Product number: 1299964

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Product name: 5-Bromo-2'-deoxy-uridine Labeling and Detection Kit II

U.S. CERCLA/SARA/TSCA Regulatory Information: The following chemicals are listed under the following TSCA/SARA/CERCLA lists. Refer to TSCA regulation if you need a definition for acronyms that may be shown in the TSCA Inventory field in the table below

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
5-Bromo-2'-Deoxy-uridine				Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Sodium azide	500 lb TPQ	1000 lb final RQ 454 kg final RQ	Listed	Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
Nitro blue tetrazolium chloride (NBT)				Present
Dimethylformamide		100 lb final RQ 45.4 kg final RQ	Listed	Present

Components	CERCLA/SARA 302 RQ and TPQ (40 CFR 355, App.A)	CERCLA/SARA 304 RQ (40 CFR Table 302.4)	SARA 313 Emission reporting	TSCA Inventory
5-Bromo-4-chloro-3-indolyl phosphate, 4-toluidine salt				Present
Dimethylformamide		100 lb final RQ 45.4 kg final RQ	Listed	Present

U.S. Clean Water Act (CWA)/ California Proposition 65: The following chemicals are listed under the CWA and/or California Proposition 65:

Canadian Regulations:

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.

Components	Canada - WHMIS: Classifications of Substances:
Sodium azide	D1A

16. OTHER INFORMATION

Reason for revision: The concentration of one or more components was revised. SEE SECTION 2 A component has been added to the formulation. SEE SECTION 2 Hazard information in Section 3 was updated or revised.
References: None.
Additional advice: None
Prepared by: Roche Diagnostics, Health & Safety Department, MSDS Contact: 317-521-7425 or 317-521-7505

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End of Safety Data Sheet