

Material Safety Data Sheet

DADE BEHRING

Dimension® system LI Flex® reagent cartridge

MSDS no.

DEDM0038

1. Product and company identification

Product name	: Dimension® system LI Flex® reagent cartridge
Synonym	: Lithium Flex® reagent cartridge Dimension® clinical chemistry system Flex® reagent cartridge LI
Code	: DF132
Material uses	: Pharmaceutical industry: Diagnostic agents.
Product type	: Liquid.
Manufactured/supplied	: Dade Behring Inc. Corporate Headquarters 1717 Deerfield Road Deerfield, IL 60015-0778 1-847-267-5300 Dade Behring Canada Inc. 1200 Courtneypark Drive East Mississauga, Ontario, Canada L5T-1P2 (905) 564-7333 (800) 264-0083 Transportation: (800) 424-9300 (CHEMTREC) Medical: (800) 228-5635 ext. 284 (Prosar)

2. Hazards identification

Physical state	: Liquid.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: WARNING ! CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Harmful if swallowed. Severely irritating to the skin and respiratory system. May cause sensitization by skin contact. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. 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.
<u>Potential acute health effects</u>	
Inhalation	: Severely irritating to the respiratory system.
Ingestion	: Harmful if swallowed.
Skin	: Severely irritating to the skin. May cause sensitization by skin contact.
Eyes	: Severely irritating to eyes.
<u>Potential chronic health effects</u>	
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.
<u>Over-exposure signs/symptoms</u>	

2 . Hazards identification

- 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** : None identified.

See toxicological information (section 11)

3 . Composition/information on ingredients

United States

<u>Name</u>	<u>CAS number</u>	<u>%</u>
dimethyl sulfoxide	67-68-5	48
potassium hydroxide	1310-58-3	1.97
Neomycin sulfate	1405-10-3	0.006
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	55965-84-9	0.00243 - 0.0036

Canada

<u>Name</u>	<u>CAS number</u>	<u>%</u>
dimethyl sulfoxide	67-68-5	48
potassium hydroxide	1310-58-3	1.97

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.

4 . First aid measures

- Eye contact** : 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** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Get medical attention immediately.
- Inhalation** : Move exposed person to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Get medical attention.
- Ingestion** : Loosen tight clothing such as a collar, tie, belt or waistband. 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.

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

In case of fire, use water spray (fog), foam or dry chemical.

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.

5 . Fire-fighting measures

- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
sulfur oxides
metal oxide/oxides
- 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.

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. 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).
- 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.

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. 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.

8 . Exposure controls/personal protection

Product name

United States

dimethyl sulfoxide

potassium hydroxide

Exposure limits

AIHA WEEL (United States, 1/2006).

TWA: 250 ppm 8 hour(s).

ACGIH (United States).

CEIL: 2 mg/m³

OSHA (United States, 1994).

CEIL: 2 mg/m³

NIOSH (United States, 1994).

TWA: 2 mg/m³

OSHA (United States, 1989).

CEIL: 2 mg/m³

ACGIH TLV (United States, 1/2006).

CEIL: 2 mg/m³

NIOSH REL (United States, 12/2001).

TWA: 2 mg/m³ 10 hour(s).

OSHA PEL 1989 (United States, 3/1989).

CEIL: 2 mg/m³

Canada

8 . Exposure controls/personal protection

potassium hydroxide

ACGIH (United States).

CEIL: 2 mg/m³

ACGIH TLV (United States, 1/2006).

CEIL: 2 mg/m³

Consult local authorities for acceptable exposure limits.

Not available.

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, gases 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.

9 . Physical and chemical properties

Physical state : Liquid.

Relative density : 1.08

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

10 . Stability and reactivity

Stability : The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.
Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Will not occur.

10 . Stability and reactivity

Conditions of reactivity : Extremely flammable in the presence of the following materials or conditions: organic materials and moisture.
 Highly flammable in the presence of the following materials or conditions: heat.
 Flammable in the presence of the following materials or conditions: oxidizing materials.
 Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge.

Extremely explosive in the presence of the following materials or conditions: organic materials and moisture.
 Explosive in the presence of the following materials or conditions: open flames, sparks and static discharge and oxidizing materials.

11 . Toxicological information

United States

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
mixture of: 5-chloro-2-methyl-4-isothiazolin-3-one [EC no. 247-500-7] and 2-methyl-2H-isothiazol-3-one [EC no. 220-239-6] (3:1)	LD50 Oral	Rat	53 mg/kg	-

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
dimethyl sulfoxide	-	-	-	None.	-	-
potassium hydroxide	-	-	-	None.	-	-

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Canada

Acute toxicity

Not available.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
dimethyl sulfoxide	-	-	-	None.	-	-
potassium hydroxide	-	-	-	None.	-	-

Mutagenicity

Not available.

Teratogenicity

Not available.

11 . Toxicological information

Reproductive toxicity

Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Not available.

Biodegradability

Not available.

Canada

Aquatic ecotoxicity

Not available.

Biodegradability

Not available.






13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. 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.

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.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
DOT Classification	1814	potassium hydroxide solution	8	II		-
TDG Classification	1814	Potassium hydroxide solution (potassium hydroxide)	8	II		-
ADR/RID Class	1814	Potassium hydroxide solution (potassium hydroxide)	8	II		-
IMDG Class	1814	Potassium hydroxide solution (potassium hydroxide)	8	II		-
IATA-DGR Class	1814	Potassium hydroxide solution (potassium hydroxide)	8	II		-

14 . Transport information

PG* : Packing group

15 . Regulatory information

United States

HCS Classification

: Irritating material
Sensitizing material
Target organ effects

U.S. Federal regulations

: TSCA 8(b) inventory: Water; dimethyl sulfoxide; Potassium hydroxide
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: dimethyl sulfoxide; potassium hydroxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
dimethyl sulfoxide: Immediate (acute) health hazard, Delayed (chronic) health hazard;
potassium hydroxide: Immediate (acute) health hazard, Delayed (chronic) health hazard
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: potassium hydroxide
Clean Air Act (CAA) 112 accidental release prevention: No products were found.
Clean Air Act (CAA) 112 regulated flammable substances: No products were found.
Clean Air Act (CAA) 112 regulated toxic substances: dimethyl sulfoxide; ethyl orthoformate

State regulations

: **Connecticut Carcinogen Reporting:** None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name

Cancer

Reproductive

No significant risk level

Maximum acceptable dosage level

Neomycin sulfate

No.

Yes.

No.

No.

United States inventory (TSCA 8b)

: **United States inventory (TSCA 8b):** Not determined.

Canada

WHMIS (Canada)

: Not a WHMIS controlled material.

15 . Regulatory information

- 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** : **Canada inventory:** Not determined.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

16 . Other information

- Label requirements** : CAUSES RESPIRATORY TRACT AND SKIN IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION. MAY BE HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

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

EU regulations

- Hazard symbol or symbols** :



- Risk phrases** : R36/38- Irritating to eyes and skin.
R43- May cause sensitization by skin contact.
- Safety phrases** : S24- Avoid contact with skin.
S37- Wear suitable gloves.

International regulations

- International lists** : **Australia inventory (AICS):** Not determined.
China inventory (IECSC): Not determined.
Korea inventory (KECI): Not determined.
Philippines inventory (PICCS): Not determined.
Japan inventory (ENCS): Not determined.

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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.