

# Material Safety Data Sheet

DADE BEHRING

Dimension® system TP Flex® reagent cartridge

MSDS no.

DEDM0018

## 1. Product and company identification

<b>Product name</b>	: Dimension® system TP Flex® reagent cartridge
<b>Synonym</b>	: Total Protein Flex® reagent cartridge Dimension® clinical chemistry system Flex® reagent cartridge TP
<b>Code</b>	: DF73
<b>Product type</b>	: Liquid.
<b>Manufactured/supplied</b>	: Dade Behring Inc. Corporate Headquarters 1717 Deerfield Road Deerfield, IL 60015-0778 1-847-267-5300  Dade Behring Canada Inc. 1200 Courtnepark Drive East Mississauga, Ontario, Canada L5T-1P2 (905) 564-7333 (800) 264-0083
<b><u>In case of emergency</u></b>	: Transportation: (800) 424-9300 (CHEMTREC) Medical: (800) 228-5635 ext. 284 (Prosar)

## 2. Hazards identification

<b>Physical state</b>	: Liquid.
<b>OSHA/HCS status</b>	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
<b>Emergency overview</b>	: Danger! CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS. HARMFUL IF SWALLOWED. CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS: BLOOD, KIDNEYS, LUNGS, LIVER, DIGESTIVE SYSTEM, RESPIRATORY TRACT, SKIN, EYE, LENS OR CORNEA.  Toxic if swallowed. Corrosive to the eyes, skin and respiratory system. Causes burns. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or 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.
<b>Routes of entry</b>	: Dermal contact. Eye contact. Inhalation.
<b><u>Potential acute health effects</u></b>	
<b>Inhalation</b>	: Corrosive to the respiratory system.
<b>Ingestion</b>	: Toxic if swallowed. May cause burns to mouth, throat and stomach.
<b>Skin</b>	: Corrosive to the skin.
<b>Eyes</b>	: Corrosive to eyes.
<b><u>Potential chronic health effects</u></b>	
<b>Carcinogenicity</b>	: No known significant effects or critical hazards.
<b>Mutagenicity</b>	: No known significant effects or critical hazards.
<b>Teratogenicity</b>	: No known significant effects or critical hazards.
<b>Developmental effects</b>	: No known significant effects or critical hazards.
<b>Fertility effects</b>	: No known significant effects or critical hazards.
<b><u>Over-exposure signs/symptoms</u></b>	

## 2. Hazards identification

- Inhalation** : Adverse symptoms may include the following:  
respiratory tract irritation  
coughing
- Ingestion** : Adverse symptoms may include the following:  
stomach pains
- Skin** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Eyes** : Adverse symptoms may include the following:  
pain  
watering  
redness

See toxicological information (section 11)

## 3. Composition/information on ingredients

### United States

<u>Name</u>	<u>CAS number</u>	<u>%</u>
copper sulphate	7758-98-7	2

### Canada

<u>Name</u>	<u>CAS number</u>	<u>%</u>
copper sulphate	7758-98-7	2

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** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Chemical burns must be treated promptly by a physician.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Continue to rinse for at least 10 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. Keep person warm and at rest. 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.
- Ingestion** : Get medical attention immediately. Move exposed person to fresh air. Loosen tight clothing such as a collar, tie, belt or waistband. Never give anything by mouth to an unconscious person. Do not induce vomiting unless directed to do so by medical personnel. Chemical burns must be treated promptly by a physician.

## 5. Fire-fighting measures

**Flammability of the product** : Aqueous solutions are non-flammable.

### Extinguishing media

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

**Not suitable** : None known.

**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.
- 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** : Do not ingest. Do not get in eyes or on skin or clothing. Keep container closed. Use only with adequate ventilation. Do not breathe vapor or mist. Wash thoroughly after handling.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area.

## 8 . Exposure controls/personal protection

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.
- 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

<b>Physical state</b>	: Liquid.
<b>pH</b>	: 13.3
<b>Ionicity (in water)</b>	: Amphoteric. (water).
<b>Solubility</b>	: Easily soluble in the following materials: cold water.

## 10 . Stability and reactivity

<b>Stability</b>	: The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Materials to avoid</b>	: Reactive or incompatible with the following materials: acids
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Hazardous polymerization</b>	: Will not occur.
<b>Conditions of reactivity</b>	
<b>Flammability</b>	: Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.
	:

## 11 . Toxicological information

### United States

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
copper sulphate	LD50 Intraperitoneal	Rat	20 mg/kg	-
	LD50 Intravenous	Rat	48900 ug/kg	-
	LD50 Oral	Rat	960 mg/kg	-
	LD50 Oral	Rat	300 mg/kg	-
	LD50 Subcutaneous	Rat	43 mg/kg	-
	LD50 Unreported	Rat	520 mg/kg	-
	TDL0 Intravenous	Rat	12 mg/kg	-

#### Chronic toxicity

Not available.

#### Carcinogenicity

Not available.

#### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
copper sulphate	-	-	-	None.	-	-

#### Mutagenicity

Not available.

#### Teratogenicity

Not available.

#### Reproductive toxicity

Not available.

### Canada

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
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## 11 . Toxicological information

copper sulphate	LD50	Rat	20 mg/kg	-
	Intraperitoneal			
	LD50 Intravenous	Rat	48900 ug/kg	-
	LD50 Oral	Rat	960 mg/kg	-
	LD50 Oral	Rat	300 mg/kg	-
	LD50	Rat	43 mg/kg	-
	Subcutaneous			
	LD50 Unreported	Rat	520 mg/kg	-
	TDL <sub>0</sub> Intravenous	Rat	12 mg/kg	-

### Chronic toxicity

Not available.

### Carcinogenicity

Not available.

### Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
copper sulphate	-	-	-	None.	-	-

### Mutagenicity

Not available.

### Teratogenicity

Not available.

### Reproductive toxicity

Not available.

## 12 . Ecological information

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

### United States

#### Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
copper sulphate	-	Acute LC50 0.08 to 0.11 mg/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
	-	Acute LC50 0.07 mg/L Fresh water	Fish - Oncorhynchus gilae apache	96 hours
	-	Acute LC50 0.07 to 0.08 mg/L Fresh water	Fish - Oncorhynchus clarki henshawi	96 hours
	-	Acute LC50 >0.03 mg/L Fresh water	Fish - Oncorhynchus clarkii stomias	96 hours
	-	Acute LC50 0.03 to 0.04 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 0.023 to 0.036 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 0.016 to 0.019 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 0.013 to 0.013 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 0.01 to 0.011 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
	-	Acute LC50 0.025	Daphnia -	

## 12 . Ecological information

-	Acute LC50 0.025 to 0.03 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.02 to 0.025 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.01 to 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.01 to 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.15 ppm Fresh water	Fish - Goldfish - Carassius auratus	96 hours
-	Acute LC50 0.037 ppm Marine water	Fish - Apocryptes bato	96 hours
-	Acute LC50 0.27 to 0.34 mg/L Fresh water	Fish - Xyrauchen texanus	96 hours
-	Acute LC50 0.231 to 0.287 mg/L Fresh water	Fish - Xyrauchen texanus	96 hours
-	Acute LC50 0.22 to 0.25 mg/L Fresh water	Fish - Gila elegans	96 hours
-	Acute LC50 0.16 mg/L Fresh water	Fish - Oncorhynchus mykiss	96 hours

### Biodegradability

Not available.

### Canada

#### Aquatic ecotoxicity

**Product/ingredient name**  
copper sulphate

<b>Test</b>	<b>Result</b>	<b>Species</b>	<b>Exposure</b>
-	Acute LC50 0.08 to 0.11 mg/L Fresh water	Fish - Oncorhynchus mykiss	96 hours
-	Acute LC50 0.07 mg/L Fresh water	Fish - Oncorhynchus gilae apache	96 hours
-	Acute LC50 0.07 to 0.08 mg/L Fresh water	Fish - Oncorhynchus clarki henshawi	96 hours
-	Acute LC50 >0.03 mg/L Fresh water	Fish - Oncorhynchus clarkii stomias	96 hours
-	Acute LC50 0.03 to 0.04 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.023 to 0.036 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.016 to 0.019 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.013 to 0.013 ng/ml	Daphnia - Daphnia magna	48 hours

## 12 . Ecological information

Fresh water

-	Acute LC50 0.01 to 0.011 ng/ml Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.025 to 0.03 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.02 to 0.025 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.01 to 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.01 to 0.02 ppb Fresh water	Daphnia - Daphnia magna	48 hours
-	Acute LC50 0.15 ppm Fresh water	Fish - Goldfish - Carassius auratus	96 hours
-	Acute LC50 0.037 ppm Marine water	Fish - Apocryptes bato	96 hours
-	Acute LC50 0.27 to 0.34 mg/L Fresh water	Fish - Xyrauchen texanus	96 hours
-	Acute LC50 0.231 to 0.287 mg/L Fresh water	Fish - Xyrauchen texanus	96 hours
-	Acute LC50 0.22 to 0.25 mg/L Fresh water	Fish - Gila elegans	96 hours
-	Acute LC50 0.16 mg/L Fresh water	Fish - Oncorhynchus mykiss	96 hours

### Biodegradability

Not available.

## 13 . Disposal considerations

### **Waste disposal**






: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. 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.

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

## 14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
<b>DOT Classification</b>	1824	Sodium Hydroxide solution (sodium hydroxide). Marine pollutant (copper sulphate)	8	III		<b>Marine pollutant</b> Severe marine pollutant (PP)
<b>TDG Classification</b>	1824	SODIUM HYDROXIDE, SOLUTION (sodium hydroxide)	8	III		-
<b>ADR/RID Class</b>	1824	Sodium hydroxide solution (sodium hydroxide)	8	III		-
<b>IMDG Class</b>	1824	Sodium hydroxide solution (sodium hydroxide)	8	III		-
<b>IATA-DGR Class</b>	1824	Sodium hydroxide solution (sodium hydroxide)	8	III		-

PG\* : Packing group

## 15 . Regulatory information

### United States

**HCS Classification** : Toxic material  
Corrosive material

**U.S. Federal regulations** : **United States inventory (TSCA 8b)**: Not determined.

**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**: copper sulphate

**SARA 311/312 MSDS distribution - chemical inventory - hazard identification**:  
copper sulphate: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: copper sulphate

**Clean Water Act (CWA) 311**: copper sulphate; sodium 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: No products were found.

### SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
<b>Form R - Reporting requirements</b>	: copper sulphate	7758-98-7	2
<b>Supplier notification</b>	: copper sulphate	7758-98-7	2

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

**State regulations** : Pennsylvania RTK Hazardous Substances: sodium hydroxide: (environmental hazard, generic environmental hazard); copper sulphate: (environmental hazard, generic environmental hazard)  
Michigan Critical Material: copper sulphate  
Massachusetts Substances: sodium hydroxide; copper sulphate  
New Jersey: sodium hydroxide; copper sulphate

## 15 . Regulatory information

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

### Canada

**WHMIS (Canada)** : Not a WHMIS controlled material.

**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: Copper  
**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, EYE AND SKIN BURNS.  
HARMFUL IF SWALLOWED.  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
BLOOD, KIDNEYS, LUNGS, LIVER, DIGESTIVE SYSTEM, RESPIRATORY TRACT,  
SKIN, EYE, LENS OR CORNEA.

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

### EU regulations

**Hazard symbol or symbols** :



**Risk phrases** : R35- Causes severe burns.  
R52/53- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

**Safety phrases** : S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
S29- Do not empty into drains.  
S36/37/39- Wear suitable protective clothing, gloves and eye/face protection.  
S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

### International regulations

**International lists** : **Australia inventory (AICS):** All components are listed or exempted.  
**China inventory (IECSC):** All components are listed or exempted.  
**Korea inventory (KECI):** Not determined.  
**Philippines inventory (PICCS):** All components are listed or exempted.  
**Japan inventory (ENCS):** All components are listed or exempted.

**Date of printing** : 10/16/2007.

**Date of issue** : 10/16/2007.

**Version** : 1.04

### 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.