

**Dimension® system TIBC Flex®  
reagent cartridge**

MSDS No.

DEDM0016

## 1. Product and Company Identification

<b>Product Trade Name</b>	Dimension® system TIBC Flex® reagent cartridge	<b>Validation Date</b>	29 March 2005
<b>Synonyms</b>	Total Iron Binding Capacity Flex® reagent cartridge Dimension® clinical chemistry system Flex® reagent cartridge TIBC	<b>Product Code</b>	DF83
<b>Product Use</b>	Diagnostic Agents.		
<b>Manufactured/ Supplied</b>	Dade Behring Inc. P. O. Box 6101 Newark DE 19714 USA  Product information: 800-441-9250		
<b>In Case of Emergency</b>	Transportation: (800) 424-9300 (CHEMTREC) Medical: (800) 228-5635 ext. 284 (Prosar)		

## 2. Composition and Information on Ingredients

<u>Ingredient Name</u>	<u>Conc. (% w/w)</u>	<u>CAS No.</u>	<u>U.N. No.</u>	<u>EU Symbol</u>	<u>R-Phrases</u>
Reagent			Not applicable.	-	-
Water	99	7732-18-5			
Acetamide, 2-chloro	0.3	79-07-2	Not applicable.	T	R25, R43, R62
Buffer solution			Not applicable.	-	-
Water	68	7732-18-5			
Sodium acetate	14	127-09-3	Not applicable.	-	-
Acetic acid	11	64-19-7	UN2789	C	R10, R35
Polyoxyethylene octyl phenol ether (Triton)	7	9002-93-1	Not applicable.	-	-
Urea, 2-thio	1.43	62-56-6	UN2877	Xn, N	R22, R40, R51/53, R63
Ascorbic acid tablet			Not applicable.	-	-
L-Ascorbic acid	95	50-81-7			
Polyethylene glycol	5	25322-68-3	Not applicable.	-	-

Note: See section 8 for occupational exposure limits and section 11 for LC50/LD50 information.

## 3. Hazards Identification

**Primary Hazards and Critical Effects** : DANGER!  
CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.  
HARMFUL IF SWALLOWED.  
MAY CAUSE SEVERE ALLERGIC SKIN REACTION.  
CONTAINS MATERIAL WHICH MAY CAUSE CANCER  
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:  
BLOOD, KIDNEYS, NERVOUS SYSTEM, LIVER, HEART, BLADDER, SKIN, EYES., .

## 4. First Aid Measures

- Inhalation** : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention immediately.
- Ingestion** : If swallowed, 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.
- 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. Get medical attention immediately.
- Eye Contact** : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention immediately.

## 5. Fire-Fighting Measures

- Extinguishing Media** : Use foam or all purpose dry chemicals to extinguish.
- Fire-Fighting Procedures** : Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
- Fire/Explosion Hazards** : None identified.
- Hazardous Decomposition Products** : None identified.

## 6. Accidental Release Measures

- Personal Precautions** : Put on appropriate personal protective equipment (see Section 8).
- Environmental Precautions and Clean-up Methods** : Absorb with an inert material and put the spilled material in an appropriate waste disposal.

**Note:** See section 1 for emergency contact information and section 13 for waste disposal.

## 7. Handling and Storage

- Handling** : Risk of cancer depends on duration and level of exposure. Do not get in eyes, on skin or on clothing. Do not ingest. Do not breathe vapor or mist. Avoid prolonged or repeated contact with skin. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use.

## 8. Exposure Controls and Personal Protection

### Occupational Exposure Limits

#### Ingredient Name

Acetic acid

#### OEL United States

**ACGIH TLV (United States, 2003).**

STEL: 37 mg/m<sup>3</sup> 15 minute(s).

STEL: 15 ppm 15 minute(s).

TWA: 25 mg/m<sup>3</sup> 8 hour(s).

TWA: 10 ppm 8 hour(s).

**NIOSH REL (United States, 2001).**

STEL: 37 mg/m<sup>3</sup> 15 minute(s).

STEL: 15 ppm 15 minute(s).

TWA: 25 mg/m<sup>3</sup> 10 hour(s).

TWA: 10 ppm 10 hour(s).

**OSHA PEL (United States, 1993).**

TWA: 25 mg/m<sup>3</sup> 8 hour(s).

TWA: 10 ppm 8 hour(s).

**OSHA PEL 1989 (United States, 1989).**

TWA: 25 mg/m<sup>3</sup> 8 hour(s).

TWA: 10 ppm 8 hour(s).

Polyethylene glycol

**AIHA WEEL (United States, 2001).**

TWA: 10 mg/m<sup>3</sup> 8 hour(s). Form: Aerosol

Thiourea

Not available.

#### OEL Canada

Not available.

Not available.

Not available.

- Engineering Controls** : Good general ventilation should be sufficient to control airborne levels.

**Personal Protective Equipment**

- Respiratory System** : A respirator is not needed under normal and intended conditions of product use.
- Skin and Body** : Additional body garments should be used based upon the task being performed (e.g., sleevelets, apron, gauntlets, disposable suits) to avoid exposed skin surfaces.
- Hands** : Gloves.
- Eyes** : Safety glasses. Goggles, face shield, or other full-face protection if potential exists for direct exposure to aerosols or splashes.

**9. Physical and Chemical Properties**

- Physical State and Appearance** : Solid and Liquid.
- pH** : Acidic.
- Melting Point** : May start to solidify at 16.67°C (62°F) based on data for: Acetic acid. Weighted average: 1.65°C (35°F)
- Evaporation Rate** : 1.34 (Acetic acid) compared to Butyl acetate.
- Vapor Density** : The highest known value is 2.1 (Air = 1) (Acetic acid).
- Vapor Pressure** : The highest known value is 2.4 kPa (18 mm Hg) (at 20°C) (Water). Weighted average: 2.31 kPa (17.33 mm Hg) (at 20°C)
- Density** : Weighted average: 1.01 g/cm<sup>3</sup>
- Specific Gravity** : Weighted average: 1.24 (Water = 1)
- Solubility** : Easily soluble in cold water, hot water.  
Soluble in methanol.  
Partially soluble in diethyl ether, acetone.
- Viscosity** : Dynamic: The highest known value is 1.22 cP (Acetic acid)

**10. Stability and Reactivity**

- Stability** : The product is stable.
- Conditions and Materials to Avoid** : Highly reactive with oxidizing agents.  
Reactive with metals, acids, alkalis.
- Hazardous Decomposition Products** : None identified.

**11. Toxicological Information****Toxicity Data**

<u>Ingredient Name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
Water	LD50	90000 mg/kg	Oral	Rat
L-Ascorbic acid	LD50	11900 mg/kg	Oral	Rat
	LD50	3367 mg/kg	Oral	Mouse
Sodium acetate	LD50	3530 mg/kg	Oral	Rat.
	LD50	6891 mg/kg	Oral	Mouse
Acetic acid	LD50	3300 mg/kg	Oral	Rat
	LD50	1100 mg/kg	Dermal	Rabbit
	LDLo	308 mg/kg	Oral	Male
	LDLo	600 mg/kg	Oral	Rabbit
	LC50	5620 (1 hours)	INHALATION	Mouse
	LC50	5000 (1 hours)	INHALATION	Guinea pig
Triton X-165	LD50	1900 mg/kg	Oral	rat
	LD50	3800 mg/kg	Oral	rat
	LD50	3800 mg/kg	Oral	Rat
Polyethylene glycol	LD50	31000 mg/kg	Oral	Mouse
	LD50	27500 mg/kg	Oral	Rat
	LD50	17300 mg/kg	Oral	Rabbit
	LD50	>20000 mg/kg	Dermal	Rabbit
Thiourea	LD50	125 mg/kg	Oral	Rat
	LDLo	6985 mg/kg	Oral	Rabbit
	LDLo	1000 mg/kg	Oral	Mammal

2-Chloroacetamide	LD50	155 mg/kg	Oral	Mouse
	LD50	31 mg/kg	Oral	Dog
	LD50	122 mg/kg	Oral	Rabbit

**Routes of Entry** : Absorbed through skin. Dermal contact. Eye contact. Inhalation.

#### Acute Effects

- Inhalation** : Corrosive to the respiratory system.
- Ingestion** : Harmful if swallowed.
- Skin Contact** : Corrosive to the skin. May cause sensitization by skin contact.
- Eye Contact** : Corrosive to the eyes.

#### Chronic Effects

- Adverse Effects** : allergic reaction
- Target Organs** : Contains material which causes damage to the following organs: blood, kidneys, the nervous system, liver, heart, bladder, upper respiratory tract, skin, eye,
- Carcinogenic Effects** : Classified 2B (Possible for human.) by IARC, 3 (Possible for human.) by European Union [Urea, 2-thio]. Classified 2 (Reasonably Anticipated To Be Human Carcinogens.) by NTP [Urea, 2-thio].

## 12. Ecological Information

#### Ecotoxicity Data

<u>Ingredient Name</u>	<u>Species</u>	<u>Period</u>	<u>Result</u>	
Sodium acetate	Bluegill.	24 hours	5000 ppm	
	Minnow. (EC50)	1 hours	>315 mg/l	
Acetic acid	Lepomis macrochirus (LC50)	96 hours	75 mg/l	
	Pimephales promelas (LC50)	96 hours	79 mg/l	
	Pimephales promelas (LC50)	96 hours	88 mg/l	
	Triton X-165	Pimephales promelas (LC50)	96 hours	4.5 mg/l
		Pimephales promelas (LC50)	96 hours	5.38 mg/l
		Pimephales promelas (LC50)	96 hours	6 mg/l
		Lepomis macrochirus (LC50)	96 hours	>10 mg/l
	Polyethylene glycol	Lepomis macrochirus (LC50)	96 hours	12 mg/l
		Lepomis macrochirus (LC50)	96 hours	531 mg/l
		Oncorhynchus mykiss (LC50)	96 hours	>20000 mg/l

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

## 13. Disposal Consideration

**Waste Handling and Disposal** : Waste must be disposed of in accordance with federal, state and local environmental control regulations.

## 14. Transport Information

#### United States

- Shipping Description** : Not regulated.
- Remarks** : -

#### Canada

- Shipping Description** : Not regulated.
- Remarks** : -

#### Sea

- Shipping Description** : Not regulated.

#### Air

- Shipping Description** : Not regulated.

## 15. Regulatory Information

### US Regulations

- Haz-Com Standard** : Irritating material  
Sensitizing material  
Can cause cancer
- EPA** : TSCA 8(a) PAIR: Polyoxyethylene octyl phenol ether  
TSCA 8(b) inventory: Water; L-Ascorbic acid; Acetic acid, sodium salt; Acetic acid; Polyoxyethylene octyl phenol ether; poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-; Urea, 2-thio; Acetamide, 2-chloro  
TSCA 8(d) H and S data reporting: Acetic acid  
SARA 302/304/311/312 hazardous chemicals: L-Ascorbic acid; Acetic acid, sodium salt; Acetic acid; Polyoxyethylene octyl phenol ether; Urea, 2-thio; Acetamide, 2-chloro  
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: L-Ascorbic acid: Delayed (Chronic) Health Hazard; Acetic acid, sodium salt: Immediate (Acute) Health Hazard; Acetic acid: Fire hazard, Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Polyoxyethylene octyl phenol ether: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Urea, 2-thio: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard; Acetamide, 2-chloro: Immediate (Acute) Health Hazard, Delayed (Chronic) Health Hazard  
SARA 313 toxic chemical notification and release reporting: Urea, 2-thio 1.43%  
CERCLA: Hazardous substances.: Acetic acid: 5000 lbs. (2268 kg); Urea, 2-thio: 10 lbs. (4.536 kg);  
Clean air act (CAA) 112 regulated toxic substances: Acetic acid, sodium salt  
Clean Water Act (CWA) 311: Acetic acid
- State** : **WARNING:** This product contains chemical(s) known to the State of California to cause cancer, birth defects or other reproductive harm: Urea, 2-thio  
Pennsylvania RTK: Acetic acid: (environmental hazard); Urea, 2-thio: (special hazard)  
Florida: Acetic acid  
Minnesota: Acetic acid; poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-; Urea, 2-thio  
Michigan critical material: Urea, 2-thio  
Massachusetts RTK: Acetic acid; Urea, 2-thio  
Massachusetts spill list: Urea, 2-thio  
New Jersey: Acetic acid; Polyoxyethylene octyl phenol ether; Urea, 2-thio

### Canadian Regulations

- WHMIS** : Not a WHMIS controlled material.
- CEPA** : CEPA DSL: Water; L-Ascorbic acid; Acetic acid, sodium salt; Acetic acid; Polyoxyethylene octyl phenol ether; poly(oxy-1,2-ethanediyl), .alpha.-hydro-.omega.-hydroxy-; Urea, 2-thio; Acetamide, 2-chloro
- Provincial** : No products were found.

## 16. Other Information

Validated by baldwinron on 3/29/2005.

- Version** : 1.4  
**Date of Printing** : 3/29/2005.

### 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.*