

Catalog No.: 8032

Reference No.: N/A

Revision Date: November 25, 2008

SECTION 1 – Kit / Preparation and Company Identification

1.1 MICROVUE Total DPD Kit *(For research use only – Not for use in Diagnostic procedures)*

1.2 To measure total DPD in serum, samples are acid hydrolyzed. The MicroVue Total DPD protocol is optimized for the detection of DPD in the hydrolysate. The Metra Total DPD assay is a competitive enzyme immunoassay in a microassay stripwell format. DPD in the samples or standards competes with alkaline phosphatase conjugated DPD for binding to monoclonal anti-DPD antibody coated on the strip. The reaction is detected with pNPP substrate.

1.3 Manufacturer: Quidel Corporation – 10165 McKellar Court – San Diego, CA 92121
Telephone No.: 1-858-552-1100 **Toll Free No.:** 1-800-874-1517 **Fax No.:** 1-858-453-4338

1.4 Emergency No.: Poison Control @ 1-800-876-4766 (USA only)

SECTION 2 – Composition / Ingredients Information

2.1 Description of Components: Total DPD Assay Buffer, Total DPD Acid, Total DPD Base, Total DPD Serum Hydrolysis Control, Total DPD Urine Hydrolysis Control, Stop Solution, 10x Wash Buffer, Substrate Buffer, Low/High Controls and Coated Strips

2.2 Hazardous Ingredients: Dangerous solid or liquid substances present in >1% (or as required by applicable U.S., Canadian and E.U. regulations):

CAS#	EINECS	Chemical Name	Kit Component	% Weight	Classification:			
					US OSHA	WHMIS	EU	Risk Phrases
1310-73-2	215-185-5	Sodium Hydroxide	4702 (Stop Solution)	1.5%	Corrosive	Corrosive	Xi	R36/38
111-42-2	203-868-0	Diethanolamine	4705 (Substrate)	11.5%	Irritant	Corrosive	Xn	R22, 38, 41, 48/22
1310-73-2	215-185-5	Sodium Hydroxide (NaOH)	4837 (Base)	30.8%	Corrosive	Corrosive	C	R35
7647-01-0	231-595-7	Hydrochloric Acid (HCl)	4834 (Acid)	13.5%	Corrosive	Corrosive	Xi	R36/37/38
3375-50-6	243-285-9	Mercaptoethane Sulfonic Acid (MESNA)	4834 (Acid)	9.8%	Irritant	N/A	N/A	N/A

**See Section 15 and Section 16 – Regulatory Information for additional information on hazard classifications.

SECTION 3 – Hazard Identification

Emergency Overview: As part of good industrial and personal hygiene and safety procedure, avoid all unnecessary exposure to the chemical components within this kit and ensure prompt removal from skin, eyes, and clothing.

- 3.1 Some components of this kit are considered as hazardous or dangerous preparations as defined by the Occupational Safety and Health Administration (OSHA), the Canadian Workplace Materials Information System (WHMIS), and the European Union (EU) Directives 1999/45/EC and 67/548/EEC. **Significant health effects are NOT anticipated from routine use when adhering to the instructions listed in the Package Insert provided with assay kit.**
- 3.2 Contact with **Stop Solution (#4702)**, **Substrate Buffer (#4705)**, **Total DPD Acid (#4834)**, or **Total DPD Base (#4837)** to the eyes and/or skin may cause irritation upon a single exposure. Avoid prolonged contact with any chemical within this kit.
- 3.3 This kit may contain material of human or animal origin and should be considered as potentially capable of transmitting infectious diseases.
- 3.4 All patient samples, contaminated test strips, and fluids should be handled as potentially infectious. Follow **Universal Precautions** as necessary.
- 3.5 **Warning Properties:**

Chemical Name	Kit Component	Degree	Description
Sodium Hydroxide	4702 (Stop) 4837 (Base)	Poor	Sodium Hydroxide is odorless.
Diethanolamine	4705 (Substrate)	Fair	Diethanolamine has a mild ammonia-like odor.
Hydrochloric Acid/ MESNA	4834 (Acid)	Good	Irritating, pungent odor.

SECTION 4 – First Aid Measures

Special Instructions:

- 4.1 **Inhalation** Inhalation of any component in this kit is unlikely. If a component of this kit is inhaled and causes discomfort, move exposed individual to fresh air. Seek medical attention if breathing is difficult or symptoms persist.
- 4.2 **Eye Contact** Components 4837/4702 (Base) and 4834 (Acid) are corrosive. If these components enter the eyes, immediately wash eyes under potable running water for 15 minutes or longer, making sure that the eyelids are held open. If other components of this kit enter the eyes and cause discomfort, gently wash eyes under potable running water for 15 minutes or longer, making sure that the eyelids are held open. For both situations, if pain or irritation occurs, obtain medical attention.
- 4.3 **Skin Contact** Components 4837/4702 (Base) and 4834 (Acid) are corrosive. If these components contact the skin, remove any contaminated clothing and wash affected area with plenty of soap and water. If other components of this kit contact the skin and causes discomfort, remove any contaminated clothing. Wash affected area with plenty of soap and water. For both situations, if pain or irritation occurs, obtain medical attention.
- 4.4 **Ingestion** If a component of this kit is ingested, wash mouth out with water. If irritation or discomfort occurs, obtain medical attention.

SECTION 5 – Fire Fighting Measures

- 5.1 **Extinguishing Media:** For small fires, use dry chemical, carbon dioxide, or alcohol-resistant foam.

5.2 Special Fire Fighting Procedures: This material will not significantly contribute to the intensity of a fire. Use extinguishing material suitable to the surrounding fire. Utilize proper personal protective equipment when responding to any fire. Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Move containers from fire area if it can be done without risk to personnel. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

5.3 Unusual Fire and Explosion Hazards: When involved in a fire, this material can decompose and produce irritating fumes and toxic gases (e.g., Carbon monoxide, Carbon dioxide).

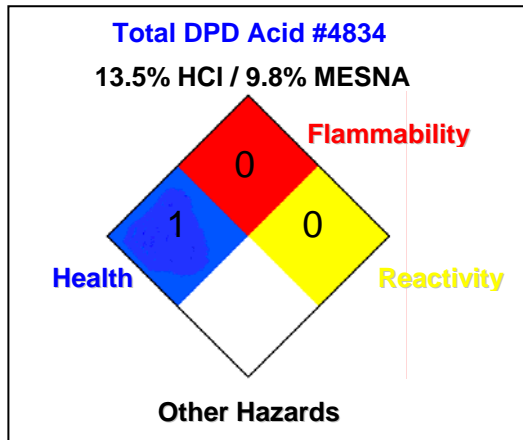
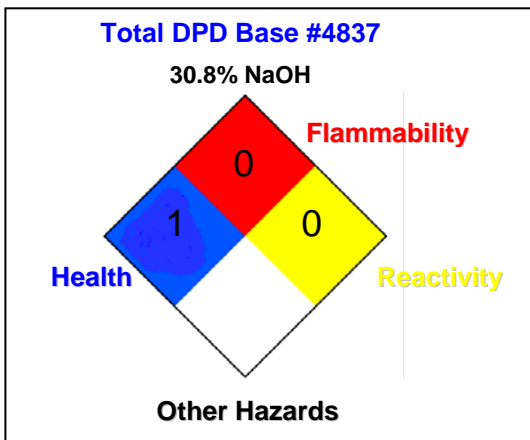
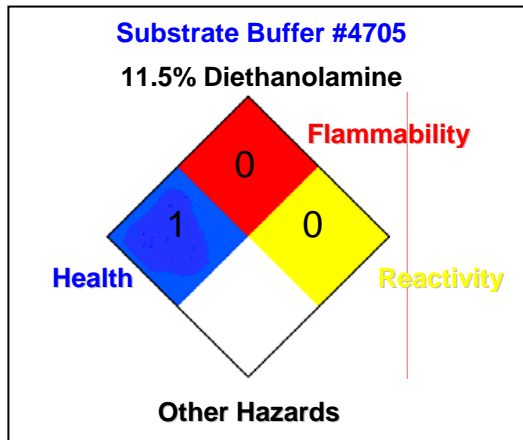
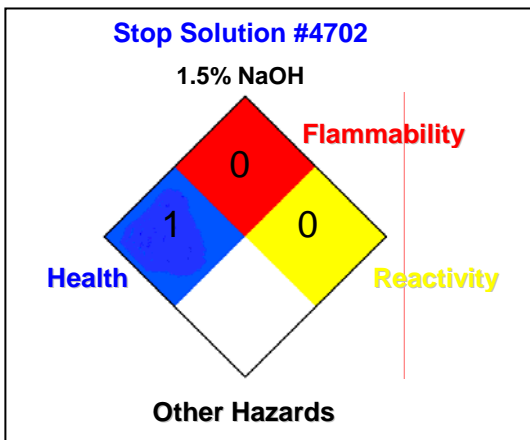
Explosion Sensitivity to Mechanical Impact: Not sensitive under normal conditions.

Explosion Sensitivity to Static Discharge: Not sensitive under normal conditions.

5.4 Additional Considerations:

	Stop #4702:	Substrate #4705:	Acid #4834:	Base #4837:
5.4.1 Flash Point	Non Combustible	Non Combustible	Non Combustible	Non Combustible
5.4.2 Auto-ignition Temperature	Not Applicable	Not Applicable	Not Applicable	Not Applicable
5.4.3 Upper / Lower Explosion Limit	Not Applicable	Not Applicable	Not Applicable	Not Applicable

5.5 NFPA Ratings:



****Only trained and competent personnel shall attempt to extinguish a fire. Contact emergency response personnel as required. Be cautious of surrounding materials that may react with the extinguishing media.**

SECTION 6 – Accidental Release Measures

- 6.1 Personal Precautions:** This kit contains materials of biological origin. Avoid personal contact. Use Universal Precautions during clean-up procedures.
- 6.2 Environmental Precautions:** No environmental hazard is anticipated provided that the material is handled and disposed of with due care. Contain spill to prevent migration.
- 6.3 Spill and Leak Procedures:** Large spills of this kit are unlikely. Personnel who have received basic chemical safety training can generally handle small-scale releases, such as 1 container of this kit. Utilize safety glasses, nitrile gloves, and lab coat/apron when responding to spills involving the components of this kit. Absorb liquid and place in container suitable for disposal. Dispose of in accordance with applicable U.S. Federal, State, or local procedures or appropriate standards of Canada or the EU (see Section 13, Disposal Considerations).

SECTION 7 – Handling and Storage

- 7.1 Handling:** As with all chemicals, avoid getting this kit **ON YOU** or **IN YOU**. Wash exposed areas thoroughly after using this kit. Do not eat or drink while using this kit. This kit should be handled only by qualified clinical or laboratory employees trained on the use of this kit and who are familiar with the potential hazards. This kit should be handled as though capable of transmitting infectious diseases. Universal Precautions should be followed when using this kit. **Not for use by general public.**
- 7.2 Storage:** Keep away from incompatible materials (Section 10). To maintain efficacy, store according to the package insert instructions.
- 7.3 Specific Use:** *For research use only – Not for use in Diagnostic procedures*

SECTION 8 – Exposure Controls and Personal Protection

8.1 Exposure Limits:

CAS#	Chemical Name	OSHA (PEL)	ACGIH (TLV)	MAK
1310-73-2	Sodium Hydroxide	2 mg/m ³	2 mg/m ³ (Ceiling)	2 mg/m ³
111-42-2	Diethanolamine	12.9 mg/m ³	1.98 mg/m ³ (Skin)	Not Established
7647-01-0	Hydrochloric Acid	7 mg/m ³	3 mg/m ³ (Ceiling)	7.6 mg/m ³
3375-50-6	MESNA	Not Established	Not Established	Not Established

8.2 Occupational Exposure Controls:

8.2.1 Engineering Controls:

No special engineering controls are required when working with this kit. Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

8.2.2 Personal Protective Equipment (PPE):

Respiratory

Protection: None needed under normal conditions of use.

Eye Contact:

Safety glasses or face shield are recommended to prevent eye contact.

Hand Contact:

Impervious gloves (nitrile or equivalent) should be worn to prevent hand contact.

Skin Contact:

Lab Coat or similar garment should be worn.

8.2.3 Environmental Controls: No special environmental controls are required.

SECTION 9 – Physical and Chemical Properties

Characteristic	Stop Solution #4702 1.5% Sodium Hydroxide	Substrate Buffer #4705 11.5% Diethanolamine	Total DPD Acid #4834 13.5% HCl, 9.8% MESNA	Total DPD Base #4837 30.8% NaOH
Boiling Point (°C)	100	268 (diethanolamine)	Not Available	100
Melting Point (°C)	0	28 (diethanolamine)	Approximately 0	0
Specific Gravity (H ₂ O = 1)	1.3	1.09 (diethanolamine)	Approximately 1.2	1.3
Vapor Pressure (mm Hg)	14	Not available	Not available	14
Vapor Density (AIR = 1)	N/A	Not available	Not available	N/A
Evaporation Rate (Ether = 1)	< 1	< 1	Not available	< 1
pH:	13	9.9	< 1	12
Solubility in Water:	Complete	Soluble	Complete	Complete
Appearance and Odor:	Clear colorless liquid with no odor	Mild ammonia-like odor	Clear liquid with pungent odor	Clear colorless liquid with no odor

SECTION 10 – Stability and Reactivity

Characteristic	Stop Solution #4702 1.5% Sodium Hydroxide	Substrate Buffer #4705 11.5% Diethanolamine	Total DPD Acid #4834 13.5% HCl, 9.8% MESNA	Total DPD Base #4837 30.8% NaOH
Stability	Stable	Stable	Stable	Stable
Conditions to Avoid	Incompatible materials	Incompatible materials	Incompatible materials	Incompatible materials
Materials to avoid (Incompatibilities)	Strong oxidizing agents; Strong acids	Strong oxidizing agents; Strong acids	Strong oxidizing agents; Strong acids, bases	Strong oxidizing agents; Strong acids
Hazardous Decomposition or Byproducts	Thermal decomposition may release toxic fumes of sodium oxide	Thermal decomposition may release irritating fumes or toxic gases (e.g., Carbon monoxide, Carbon dioxide).	Thermal decomposition may release toxic fumes of sodium oxide	Thermal decomposition may release toxic fumes of sodium oxide
Hazardous Polymerization	Will not occur	Will not occur	Will not occur	Will not occur

SECTION 11 – Toxicological Information

11.1 Toxicity Data for Hazardous Ingredients: There are currently no toxicity data available for the components of this kit; the following toxicology information is available for raw materials present in greater than 1% concentration.

The following data are available for Sodium hydroxide:

Eye effects-Monkey 1%/24H Severe irritation effects
 Skin-Rabbit, adult 500 mg/24H Severe irritation effects
 Eye effects-Rabbit, adult 4 g Mild irritation effects
 Eye effects-Rabbit, adult 1% Severe irritation effects
 Eye effects-Rabbit, adult 50 mg/24H Severe irritation effects
 Eye effects-Rabbit, adult 1 mg/24H Severe irritation effects
 Eye effects-Rabbit, adult 100 mg rns Severe irritation effects
 Cytogenetic Analysis-grasshopper-Parenteral 20 mg
 Intraperitoneal-Mouse LD₅₀:40 mg/kg
 Oral-Rabbit, adult LDLo:500 mg/kg

The following data are available for Diethanolamine:

Skin-Rabbit, adult 50 mg open Mild irritation effects
 Skin-Rabbit, adult 500 mg/24H Mild irritation effects
 Eye effects-Rabbit, adult 5500 mg Severe irritation effects
 Eye effects-Rabbit, adult 750 mg/24H Sever irritation effects
 Oral-Rat TDLo:18,382 mg/kg (male 14D pre):Reproductive effects
 Oral-Rat LD₅₀:710 mg/kg
 Intraperitoneal-Rat LD₅₀:120 mg/kg
 Subcutaneous-Rat LD₅₀:2200 mg/kg
 Intravenous-Rat LD₅₀:778 mg/kg
 Intramuscular-Rat LD₅₀:1500 mg/kg
 Oral-Mouse LD₅₀:3300 mg/kg
 Intraperitoneal-Mouse LD₅₀:2300 mg/kg
 Subcutaneous-Mouse LD₅₀:3553 mg/kg
 Skin-Rabbit, adult LD₅₀:12,200 mg/kg
 Oral-Guinea Pig, adult LD₅₀:2g/kg

The following data are available for Hydrochloric Acid:

Eye effects-Rabbit, adult 100 mg rns Mild irritation effects
 DNA Repair-Escherichia coli 25 mg/well
 Cytogenetic Analysis-grasshopper-Parenteral 20 mg
 Inhalation-Rat TCLo:450 mg/m³/1H (1D pre):
 Teratogenic effects
 Inhalation-Human LCLo:1300 ppm/30M
 Inhalation-Human LCLo:3000 ppm/5M
 Unreported-Man LDLo:81 mg/kg
 Inhalation-Rat LC₅₀:3124 ppm/1H
 Inhalation-Mouse LC₅₀:1108 ppm/1H
 Intraperitoneal -Mouse LD₅₀:1449 mg/kg
 Oral-Rabbit, adult LD₅₀:900 mg/kg
 Inhalation-Rabbit, adult LCLo:4416 ppm/30M

11.1 Toxicity Data for Hazardous Ingredients (cont.):

The following data are available for **Mercaptoethane Sulfonic Acid (MESNA)**:

- TDL_o (intravenous, rat) = 8800 mg/kg/female 7–17 days after conception;
- TDL_o (intravenous, rat) = 17500 mg/kg/35 days/continuous;
- TDL_o (intravenous, rat) = 4400 mg/kg/female 7–17 days after conception;
- TDL_o (intravenous, rat) = 10400 mg/kg/female 7–17 days after conception lactating female 21 days post-birth
- TDL_o (intravenous, rat) = 26880 mg/kg/male 9 weeks pre-mating/female 2 weeks pre-mating- 7 days after conception
- TDL_o (intraperitoneal, rat) = 72 g/kg/26 weeks/continuous;
- TDL_o (intraperitoneal, mouse) = 48 g/kg/4weeks/intermittent;
- TDL_o (intravenous, rabbit) = 7800 mg/kg/female 6–18 days after conception;
- TDL_o (intravenous, dog) = 11200 mg/kg/35 days/continuous;
- LD₅₀ (oral, rat) = 4440 mg/kg
- LD₅₀ (intravenous, rat) = 1683 mg/kg
- LD₅₀ (intravenous, rat) = 1510 mg/kg;
- LD₅₀ (intraperitoneal, rat) = 1251 mg/kg
- LD₅₀ (subcutaneous, rat) = 2313 mg/kg;
- LD₅₀ (oral, mouse) = 6102 mg/kg
- LD₅₀ (intravenous, mouse) = 1720 mg/kg;
- LD₅₀ (intravenous, mouse) = 1887 mg/kg
- LD₅₀ (intraperitoneal, mouse) = 2005 mg/kg
- LD₅₀ (subcutaneous, mouse) = 1200 mg/kg
- LD (oral, dog) > 2 gm/kg
- LDLo (intravenous, dog) = 400 mg/kg

11.2 Primary Routes of Exposure:

Overexposures to components within this kit are not expected. Common routes of exposure may include ingestion and eye/skin contact. Specific paths of concern for potentially infectious materials are skin puncture, contact with broken skin, contact with mucous membranes and inhalation of aerosolized material.

11.3 Potential Effects of Acute Overexposure, By Route Of Exposure:

This kit may contain materials of human or animal origin and should be considered as potentially capable of transmitting infectious diseases

- INHALATION:** Vapors, mists, sprays, or dusts of this kit can cause irritation to the respiratory tract.
- CONTACT WITH SKIN or EYES:** Contact can cause eye or skin irritation.
- SKIN ABSORPTION:** Components of this kit is reported to be absorbed through intact skin.
- INGESTION:** If the kit is swallowed, irritation of the mouth, throat, and other tissues of the gastrointestinal system can occur.
- INJECTION:** Accidental injection of this kit can cause burning, reddening, and swelling in addition to the wound. Symptoms of such exposure can include those described under “Inhalation”, “Contact with Skin or Eyes,” and “Ingestion”.

11.4 Potential Effects of Chronic Exposure:

Long-term skin or eye contact can result in dermatitis or eye irritation.

11.5 Symptoms of Overexposure:

Symptoms of overexposure may include: eye, skin, nose, and throat irritation, headache, nausea and vomiting, and burns to contacted areas. Symptoms may be delayed for several hours after exposure.

11.6 Medical Exposure Aggravated by Exposure:

Persons with pre-existing skin disorders; eye problems or impaired respiratory system function can be more susceptible to health effects associated with overexposures to the components within this kit.

11.7 Carcinogenicity:

The ingredients in this kit are not listed as carcinogens by any of the following: ACGIH, IARC, NTP, or OSHA.

SECTION 12 – Ecological Information

12.1 Ecotoxicity

No adverse effects on the environment are expected from the components of this kit.

Hydrochloric Acid Eco-Toxicity information:

Bluegill/Sunfish: 3.6 mg/L (48 Hr-Lethal)

Bluegill/Sunfish: LC₅₀: 96 Hr, pH 3.0-3.

There is no aquatic toxicity data for any other component of this kit at this time.

12.2 Mobility

Mobility data are not available for the components of this kit.

12.3 Persistence and Degradability

There is no persistence or degradation data for any component of this kit at this time.

12.4 Bioaccumulative Potential

There is limited potential for the components within this kit to accumulate in plant or animal systems.

SECTION 13 – Disposal Considerations

Dispose of waste materials, unused components and contaminated packaging in compliance with country (i.e., Canada, EU) federal, state and local regulations. If unsure of the applicable requirements, contact the authorities for information.

SECTION 14 – Transport Information

14.1 U.S. Transportation

This kit qualifies for the small quantity exception under 49 CFR 173.4 and is therefore not regulated per 49 CFR 172.101, the U.S. department of transportation.

Per 49 CFR 173.4, Small quantities of Class 8 (corrosive) liquids not exceeding 30 ml per inner receptacle may be exempt from DOT requirements. Specific quantity, packaging and labeling requirements, as described in 49 CFR 173.4 (a), must be met to qualify for this exemption.

14.2 Canadian Transportation

The above-listed DOT basic description applies to this kit under the regulations of Transport Canada.

14.3 International Air Transportation

This kit qualifies as a “Dangerous Good in Excepted Quantity” under the provisions of Section 2.7 of the Dangerous Goods Regulations of the International Air Transportation Association (IATA).

Per Section 2.7 of the Dangerous Goods Regulations, very small quantities of dangerous goods may be excepted from marking, labeling and documentation requirements of the Dangerous Goods Regulations, as long as all the provisions of Section 2.7 are complied with.

SECTION 15 – Regulatory Information

15.1 U.S. Federal and State Regulations

	Hydrochloric Acid	Diethanolamine	Sodium Hydroxide	MESNA
40 CFR 355.30/355.40 - SECTION 302	Not Listed	Not Listed	Not Listed	Not Listed
40 CFR 302.4 – SECTION 304	RQ = 5000 lbs.	RQ = 100 lbs.	RQ = 1000 lbs.	Not Listed
40 CFR 372.65 – SECTION 313	Not Listed	Listed	Not Listed	Not Listed

U.S. SARA SECTION 311/312 FOR KIT:

Acute health effects; chronic health effects.

U.S. TSCA INVENTORY STATUS:

The components of this kit are listed on the TSCA Inventory.

OTHER U.S. FEDERAL REGULATIONS:

Not applicable.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65):

This material is not found on either the Proposition 65 Carcinogen List or the Adverse Reproductive Effects List.

15.2 Label Information

ANSI Z129.1	Stop Solution #4702 1.5% Sodium Hydroxide	Substrate Buffer #4705 11.5% Diethanolamine	Total DPD Acid #4834 13.5% HCl, 9.8% MESNA	Total DPD Base #4837 30.8% NaOH	Kit Package
Labeling:	CAUTION: Corrosive. Harmful if swallowed. Eye and skin irritant.	CAUTION: Eye and skin irritant.	CAUTION: Corrosive. Harmful if swallowed. Eye and skin irritant.	CAUTION: Corrosive. Harmful if swallowed. Eye and skin irritant.	CAUTION: Kit components may be corrosive. Harmful if swallowed. Eye and skin irritants.
Label Precautions:	Do not swallow or take internally. Do not get in eyes, on skin, or on clothing.	Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.	Do not swallow or take internally. Do not get in eyes, on skin, or on clothing.	Do not swallow or take internally. Do not get in eyes, on skin, or on clothing.	Do not swallow or take internally. Do not get in eyes, on skin, or on clothing. This kit contains material of animal origin and should be considered as potentially capable of transmitting infectious diseases. Follow package insert instructions for use.

ENVIRONMENTAL HAZARDS:

Do not discharge effluent containing this kit into streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this kit to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

15.3 Canadian Regulations:

CANADIAN DSL/NDL INVENTORY STATUS:

The components of this kit are listed on the DSL Inventory.

CANADIAN WHMIS SYMBOLS (Stop Solution #4702, Substrate Buffer #4705, Total DPD Acid #4834, and Total DPD Base #4837):



E

Corrosive Materials

15.3 HMIS Ratings (See Page 10 for Definition of Ratings):

Stop Solution #4702

1.5% Sodium Hydroxide

Health	2*
Flammability	0
Physical Hazard	0
Protective Equipment	C

Substrate Buffer #4705

11.5% Diethanolamine

Health	1*
Flammability	0
Physical Hazard	0
Protective Equipment	C

Total DPD Acid #4834

13.5% HCl, 9.8% MESNA



Health	2*
Flammability	0
Physical Hazard	0
Protective Equipment	C



Total DPD Base #4837

30.8% NaOH

Health	1*
Flammability	0
Physical Hazard	0
Protective Equipment	C

15.5 EU Labeling Classification:

<p>Classification Stop Solution #4702</p>  <p>Xi Irritant</p>	<p>Risk Phrases (for 1.5% Sodium Hydroxide): R36/38: Irritating to eyes and skin</p> <p>Safety Phrases: S2: Keep out of the reach of children. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S37/39: Wear suitable gloves and eye/face protection. S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</p>
<p>Classification Substrate Buffer #4705</p>  <p>Xn Harmful</p>	<p>Risk Phrases (for 11.5% Diethanolamine): R22: Harmful if swallowed. R38: Irritating to skin. R41: Risk of serious damage to eyes. R48/22: Harmful: danger of serious damage to health by prolonged exposure if swallowed.</p> <p>Safety Phrases: S2: Keep out of the reach of children. S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</p>

	<p>S36/37/39: Wear suitable protective clothing, gloves, and eye/face protection.</p> <p>S46: If swallowed, seek medical advice immediately and show this container or label.</p>
<p>Classification: Total DPD Acid #4834</p>  <p>Xi Irritant</p>	<p>Risk Phrases (for 13.5% Hydrochloric Acid, 9.8% MESNA)</p> <p>R36/37/38: Irritating to eyes, respiratory system and skin</p> <p>Safety Phrases:</p> <p>S1/2: Keep locked up and out of the reach of children.</p> <p>S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</p> <p>S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). immediately (show the label where possible).</p>
<p>Classification: Total DPD Base #4837</p>  <p>C Corrosive</p>	<p>Risk Phrases (for 30.8% Sodium Hydroxide):</p> <p>R35: Causes severe burns.</p> <p>Safety Phrases:</p> <p>S1/2: Keep locked up and out of the reach of children.</p> <p>S26: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.</p> <p>S37/39: Wear suitable gloves and eye/face protection.</p> <p>S45: In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).</p>

SECTION 16 – Other Information

PREPARED BY: Quidel Corporation
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 San Diego, CA 92121
 1-800-874-1517

DATE OF PRINTING November 25, 2008

Quidel Corporation provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the materials contained in this kit by a properly trained person using this kit. Quidel Corporation shall not be held liable for any damage resulting from handling or use.

DEFINITIONS OF TERMS

A large number of abbreviations and acronyms appear on a MSDS. Some of these, which are commonly used, include the following:

CAS #: This is the Chemical Abstract Service Number that uniquely identifies each compound.

ACGIH - American Conference of Governmental Industrial Hygienists, a professional association that establishes exposure limits.

TLV - Threshold Limit Value - an airborne concentration of a substance that represents conditions under which it is generally believed that nearly all workers can be repeatedly exposed without adverse effect. The duration must be considered, including the 8-hour Time Weighted Average (**TWA**), the 15-minute Short Term Exposure Limit, and the instantaneous Ceiling Level (**C**). Skin absorption effects must also be considered.

OSHA - U.S. Occupational Safety and Health Administration

PEL - Permissible Exposure Limit - This exposure value means exactly the same as a TLV, except that it is enforceable by OSHA. The OSHA Permissible Exposure Limits are based in the 1989 PELs and the June, 1993 Air Contaminants Rule (Federal Register: 58: 35338-35351 and 58: 40191). Both the current PELs and the vacated PELs are indicated. The phrase, "Vacated 1989 PEL," is placed next to the PEL that was vacated by Court Order.

IDLH - Immediately Dangerous to Life and Health - This level represents a concentration from which one can escape within 30-minutes without suffering escape-preventing or permanent injury.

The DFG - MAK is the Republic of Germany's Maximum Exposure Level, similar to the U.S. PEL. **NIOSH** is the National Institute of Occupational Safety and Health, which is the research arm of the U.S. Occupational Safety and Health Administration (**OSHA**). NIOSH issues exposure guidelines called **Recommended Exposure Levels (RELs)**. When no exposure guidelines are established, an entry of **NE** is made for reference.

HAZARD RATINGS:

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM: Health Hazard:

0 (minimal acute or chronic exposure hazard); **1** (slight acute or chronic exposure hazard); **2** (moderate acute or significant chronic exposure hazard); **3** (severe acute exposure hazard; onetime overexposure can cause permanent injury and can be fatal); **4** (extreme acute exposure hazard; onetime overexposure can be fatal). Flammability Hazard: **0** (minimal hazard); **1** (materials that require substantial pre-heating before burning); **2** (combustible liquid or solids; liquids with a flash point of 38-93°C [100-200°F]); **3** (Class IB and IC flammable liquids with flash points below 38°C [100°F]); **4** (Class IA flammable liquids with flash points below 23°C [73°F] and boiling points below 38°C [100°F]). Reactivity Hazard: **0** (normally stable); **1** (material that can become unstable at elevated temperatures or which can react slightly with water); **2** (materials that are unstable but do not detonate or which can react violently with water); **3** (materials that can detonate when initiated or which can react explosively with water); **4** (materials that can detonate at normal temperatures or pressures).

NATIONAL FIRE PROTECTION ASSOCIATION: Health Hazard: **0** (material that on exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials); **1** (materials that on exposure under fire conditions could cause irritation or minor residual injury); **2** (materials that on intense or continued exposure under fire conditions could cause temporary incapacitation or possible residual injury); **3** (materials that can on short exposure could cause serious temporary or residual injury); **4** (materials that under very short exposure could cause death or major residual injury). Flammability Hazard and Reactivity Hazard: Refer to definitions for "Hazardous Materials Identification System".

FLAMMABILITY LIMITS IN AIR:

Much of the information related to fire and explosion is derived from the National Fire Protection Association (**NFPA**). Flash Point - Minimum temperature at which a liquid gives off sufficient vapors to form an ignitable mixture with air. Autoignition Temperature: The

minimum temperature required to initiate combustion in air with no other source of ignition. LEL - the lowest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source. UEL - the highest percent of vapor in air, by volume, that will explode or ignite in the presence of an ignition source.

TOXICOLOGICAL INFORMATION:

Possible health hazards as derived from human data, animal studies, or from the results of studies with similar compounds are presented. Definitions of some terms used in this section are: **LD₅₀** - Lethal Dose (solids & liquids) which kills 50% of the exposed animals; **LC₅₀** - Lethal Concentration (gases) which kills 50% of the exposed animals; **ppm** concentration expressed in parts of material per million parts of air or water; **mg/m³** concentration expressed in weight of substance per volume of air; **mg/kg** quantity of material, by weight, administered to a test subject, based on their body weight in kg. Other measures of toxicity include **TDL₀**, the lowest dose to cause a symptom and **TCL₀** the lowest concentration to cause a symptom; **TDL₀**, **LDL₀**, **LDo**, **TC**, **TCo**, **LCL₀**, and **LCo**, the lowest dose (or concentration) to cause lethal or toxic effects. **BEI** - Biological Exposure Indices, represent the levels of determinants that are most likely to be observed in specimens collected from a healthy worker who has been exposed to chemicals to the same extent as a worker with inhalation exposure to the TLV. Ecological Information: **EC** is the effect concentration in water.

Data from several sources are used to evaluate the cancer-causing potential of the material. The sources and ratings are: **IARC** - the International Agency for Research on Cancer; 1 = Carcinogenic to humans, 2A, 2B = Probably carcinogenic to humans, 3 = Unclassifiable as to carcinogenicity in humans, and 4 = Probably not carcinogenic to humans. **NTP** - the National Toxicology Program; K = Known to be a human carcinogen, and R = Reasonably anticipated to be a human carcinogen. **RTECS** - the Registry of Toxic Effects of Chemical Substances. **OSHA** - Occupational Safety and Health Administration and **CAL/OSHA** - California's subunit of the Occupational Safety and Health Administration; Ca = Carcinogen defined with no further categorization. **ACGIH** - American Conference of Governmental Industrial Hygienists; A1 = Confirmed human carcinogen, A2 = Suspected human carcinogen, A3 = Confirmed animal carcinogen with unknown relevance to humans, A4 = Not classifiable as a human carcinogen, and A5 = Not suspected as a human carcinogen. **NIOSH** - U.S. National Institute for Occupational Safety and Health; Ca = Potential occupational carcinogen, with no further categorization. **EPA** - U.S. Environmental Protection Agency; A = Human carcinogen, B = Probable human carcinogen, C = Possible human carcinogen, D = Not classifiable as to human carcinogenicity, E = Evidence of Non-carcinogenicity for humans, K = Known human carcinogen, L = Likely to produce cancer in humans, CBD = Cannot be determined, NL = Not likely to be carcinogenic in humans, and I = Data are inadequate for an assessment of human carcinogenic potential.

REGULATORY INFORMATION:

This section explains the impact of various laws and regulations on the material. **EPA** is the U.S. Environmental Protection Agency. **WHMIS** is the Canadian Workplace Hazardous Materials Information System. **DOT** and **TC** are the U.S. Department of Transportation and the Transport Canada, respectively.

Superfund Amendments and Reauthorization Act (SARA); the Canadian Domestic/Non-Domestic Substances List (**DSL/NDL**); the U.S. Toxic Substance Control Act (**TSCA**); Marine Pollutant status according to the **DOT**; the Comprehensive Environmental Response, Compensation, and Liability Act (**CERCLA** or **Superfund**); and various state regulations. This section also includes information on the precautionary warnings that appear on a material's industrial package label.