

Section 1. Chemical Product and Company Identification

Responsible Name **Pierce Administration**

Common Name **DAB Substrate Kit (10x)**

Code 0034002

Supplier Pierce Chemical Company
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747

In Case of Emergency CALL CHEMTREC:
800.424.9300
OUTSIDE US:
202.483.7616

Print Date 3/8/2000

Validation Date **3/8/2000**

MSDS# 2504

Component/Item# 1) 3,3' Diaminobenzidine 1855920 component
Tetrahydrochloride Substrate of #0034002
2) Stable Peroxide Substrate Buffer (10X) 1855910

Manufacturer Pierce Chemical Company
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747

Section 2. Composition and Information on Hazardous (OSHA) Ingredients

Name	% by Weight	Exposure Limits
1) Methanol	35-50	TWA: 200 STEL: 250 (ppm) from ACGIH (TLV) [United States] [1994] SKIN TWA: 262 STEL: 328 (ppb) from ACGIH (TLV) [United States] [1994] SKIN TWA: 200 STEL: 250 (ppm) from NIOSH [United States] [1994] SKIN TWA: 260 STEL: 325 (mg/m ³) from NIOSH [United States] [1994] SKIN TWA: 200 STEL: 250 CEIL: 1040 (ppm) from OSHA (PEL) [United States] [1989] SKIN TWA: 260 STEL: 325 (mg/m ³) from OSHA (PEL) [United States] [1989] SKIN

Section 3. Hazards Identification

Review the most current and approved institutional guideline, protocol, standard operating procedure(s) and MSDS(s) for the proper handling of institutional materials/equipment associated with the use of this Pierce product.

Emergency Overview Keep away from heat, sparks and flame. Avoid contact with eyes, skin and clothing. Do not ingest. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of Entry Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, permeator), of eye contact (irritant). Severe over-exposure can result in death.

Carcinogenic Effects Data **CARCINOGENIC EFFECTS:** Classified None. by NIOSH [DAB]. Classified None. by NIOSH [Methanol]. Classified None. by NIOSH [Stable Peroxide Substrate Buffer Component 2].
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical Conditions Aggravated by Overexposure: Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

See Toxicological Information (section 11)

Section 4. First Aid Measures

SKIN: Wash contaminated skin with soap and water.

EYES: Flush with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.

Inhalation: Move exposed person to fresh air. If irritation persists, get medical attention.

Ingestion: Do not induce vomiting. If affected person is conscious, give plenty of water to drink. Seek medical attention.

Section 5. Fire Fighting Measures

Flammability of the Product Flammable.

<i>Flash Points</i>	1) 3,3' Diaminobenzidine Tetrahydrochloride Substrate	The lowest known value is OPEN CUP: 12.2°C (54°F). (Cleveland). (Methanol)
	2) Stable Peroxide Substrate Buffer (10X)	Not applicable.

Fire Hazards in Presence of Various Substances Highly flammable in presence of open flames and sparks, of heat, of combustible materials. Non-flammable in presence of shocks, of oxidizing materials, of reducing materials, of organic materials, of metals, of acids, of alkalis.

Fire Fighting Media and Instructions Flammable liquid, soluble or dispersed in water.
SMALL FIRE: Use DRY chemical powder.
LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Protective Clothing (Fire) Be sure to use an approved/certified respirator or equivalent.

Special Remarks on Fire Hazards Explosive in the form of vapor when exposed to heat or flame. Vapor may travel considerable distance to source of ignition and flash back. When heated to decomposition it emits acrid smoke and irritating fumes. (Methanol)

Section 6. Accidental Release Measures

Small Spill and Leak Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. If necessary: **Neutralize the residue with a dilute solution of acetic acid.**

Large Spill and Leak Flammable liquid. Poisonous liquid.
Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. **Neutralize the residue with a dilute solution of acetic acid.** Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7. Handling and Storage

Handling Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

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. Avoid all possible sources of ignition (spark or flame).

Continued on Next Page

Section 8. Exposure Controls/Personal Protection

Engineering Controls Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection

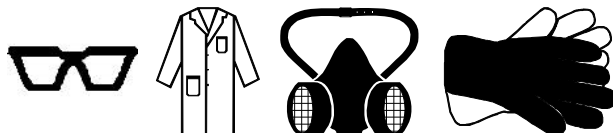
Eyes Safety glasses.

Body Lab coat.

Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Protective Clothing
(Pictograms)



Consult local authorities for acceptable exposure limits.

Section 9. Physical and Chemical Properties

Component	Physical State and Appearance	Color
1) 3,3' Diaminobenzidine Tetrahydrochloride Substrate	Liquid.	Clear
2) Stable Peroxide Substrate Buffer (10X)	Liquid.	Not available.

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Incompatibility with Various Substances Highly reactive with oxidizing agents.
Slightly reactive to reactive with reducing agents, metals.
Non-reactive with alkalis.

Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD50): 5628 mg/kg [Rat]. (Methanol).
Acute dermal toxicity (LD50): 15800 mg/kg [Rabbit]. (Methanol).

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified None. by NIOSH [DAB]. Classified None. by NIOSH [Methanol].
Classified None. by NIOSH [Stable Peroxide Substrate Buffer Component 2].

Other Toxic Effects on Humans Hazardous in case of ingestion, of inhalation.
Slightly hazardous in case of eye contact (irritant).

Special Remarks on Chronic Effects on Humans Human: passes through the placenta, excreted in maternal milk. (Methanol)

Section 12. Ecological Information

Toxicity of the Products of Biodegradation	1) 3,3' Diaminobenzidine Tetrahydrochloride Substrate 2) Stable Peroxide Substrate Buffer (10X)	The products of degradation are less toxic than the product itself. The product itself and its products of degradation are not toxic.
---	--	--

Section 13. Disposal Considerations

Waste Information Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Waste Stream Not available.

Consult your local or regional authorities.

Continued on Next Page

Section 14. Transport Information

DOT Classification CLASS 3: Flammable liquid.



Proper shipping name FLAMMABLE LIQUIDS, N.O.S., 3, UN1993, II

TDG Classification CLASS 3: Flammable liquid.



Proper shipping name FLAMMABLE LIQUIDS, N.O.S., 3, UN1993, II

Special Provisions for Not available.
Transport

ADR/RID Classification CLASS 3: Flammable liquid A.

IMO/IMDG Classification CLASS 3.1: Flammable liquid (Low flashpoint group of liquids having a flashpoint below -18°C (0°F) c.c.).

ICAO/IATA Classification Not controlled under IATA.

Section 15. Regulatory Information

HCS Classification CLASS: Flammable liquid having a flash point lower than 37.8°C (100°F).
CLASS: Target organ effects.

U.S. Federal Regulations TSCA 4(a) proposed test rules: 3,3' Diaminobenzidine Tetrahydrochloride Substrate
TSCA 8(b) inventory: 3,3' Diaminobenzidine Tetrahydrochloride Substrate; Stable Peroxide Substrate
Buffer Component 1; Stable Peroxide Substrate Buffer Component 2
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: Methanol; Stable Peroxide Substrate Buffer Component
2
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Methanol: fire, immediate
health hazard, delayed health hazard; Stable Peroxide Substrate Buffer Component 2: immediate
health hazard
SARA 313 toxic chemical notification and release reporting: Methanol 48.75%
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
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.

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

CEPA DSL: DAB; Methanol; Stable Peroxide Substrate Buffer Component 1; Stable Peroxide Substrate
Buffer Component 2

International Regulations

EINECS Not available.

DSCL (EEC) R21- Harmful in contact with skin.
R23/25- Toxic by inhalation and if swallowed.
R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin
and if swallowed.
R45- May cause cancer.

International Lists Australia (NICNAS): DAB; Methanol; Stable Peroxide Substrate Buffer Component 1; Milli-Q Water;
Stable Peroxide Substrate Buffer Component 2; Stable Peroxide Substrate Buffer Component 3

Korea (TCCL): Methanol; Stable Peroxide Substrate Buffer Component 1; Milli-Q Water; Stable
Peroxide Substrate Buffer Component 2

Philippines (RA6969): DAB; Methanol; Stable Peroxide Substrate Buffer Component 1; Milli-Q Water;
Stable Peroxide Substrate Buffer Component 2; Stable Peroxide Substrate Buffer Component 3

Continued on Next Page

State Regulations Connecticut carcinogen reporting list.: DAB
 Pennsylvania RTK: Methanol: (environmental hazard, generic environmental hazard)
 Massachusetts RTK: Methanol
 New Jersey: Methanol
 California prop. 65: No products were found.

Section 16. Other Information

**Hazardous Material
 Information System
 (U.S.A.)**

Health	*	1
Fire Hazard		1
Reactivity		0
Personal Protection		g

**National Fire Protection
 Association (U.S.A.)**



Validated by Pierce Administration on 3/8/2000.

Verified by Pierce Administration.

Printed 3/8/2000.

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.*