

Kit Material Safety Data Sheet(s)

Responsible Name Pierce Administration

Chemical Product and Company Identification

Common Name **North2South® Chemiluminescent Hybridization and Detection Kit**

Code 0017095

Supplier Pierce Biotechnology
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747 or
1.800.874.3723

Manufacturer Pierce Milwaukee LLC
2202 N. Bartlett Avenue
Milwaukee, WI 53202-1009
USA
1.877.886.7629

In Case of Emergency CHEMTREC:
800.424.9300
OUTSIDE US:
202.483.7616

Material Safety Data Sheet **Safety documents for kit components are available upon request by phone (1-800-874-3723) as well as on the Internet at <http://www.piercenet.com>.**

MSDS# 3133

Classification (USA)

Code	Common Name	Classification
1856223	North2South® Hybridization Buffer	--
1856224	North2South® Hybridization Stringency Wash Buffer (2x)	--
1856225	North2South® Blocking Buffer	--
1856226	North2South® 4x Wash Buffer	--
1856227	North2South® Substrate Equilibration Buffer	--
1856229	North2South® Luminol/Enhancer Solution	Target organ effects. Reproductive toxins.
1856228	Stabilized Streptavidin-Horseradish Peroxidase Conjugated	--
1856230	North2South® Stable Peroxide Buffer	--

Classification (Europe)

Code	Common Name	Classification
1856223	North2South® Hybridization Buffer	--
1856224	North2South® Hybridization Stringency Wash Buffer (2x)	--
1856225	North2South® Blocking Buffer	--
1856226	North2South® 4x Wash Buffer	--
1856227	North2South® Substrate Equilibration Buffer	--
1856229	North2South® Luminol/Enhancer Solution	--
1856228	Stabilized Streptavidin-Horseradish Peroxidase Conjugated	--
1856230	North2South® Stable Peroxide Buffer	--

Print Date 2/25/2003

Validation Date 2/4/2003

Conforms to 93/112/EC and ISO 11014-1

Responsible Name Pierce Administration

? Section 1. Chemical Product and Company Identification

Product name **North2South® Luminol/Enhancer Solution**

Product No. 1856229

Supplier	<i>In USA:</i> Pierce P.O. Box 117 Rockford, IL 61105 USA 815.968.0747 or 1.800.874.3723	<i>In Europe:</i> Perbio Science Industriezone III Industrielaan 27 9320 Erembodegem-Aalst Belgium Tel:+32 53 83 44 04 Fax:+32 53 83 76 38	Manufacturer	Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 USA 815.968.0747 or 1.800.874.3723
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In Case of Emergency CALL CHEMTREC:
800.424.9300
OUTSIDE US:
202.483.7616

Print Date 2/4/2003
Validation Date **2/4/2003**
MSDS# 3841

Intended Use Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Section 2. Composition, Information on Ingredients

Substance/Preparation : Preparation

<u>Ingredient Name</u>	<u>CAS No.</u>	<u>%</u>	<u>EC Number</u>	<u>Symbol</u>	<u>R-Phrases</u>
1) Enhancer Solution Component 1		0.1-1	xxx-xxx-x	Xi	R36/37/38
2) Enhancer Solution Component 2		0.1-1	Not available.	--	Not controlled under dsd (Europe).
3) Ethylene Glycol	107-21-1	1-3	203-473-3	Xn	R21/22, R36/37/38
4) Enhancer Solution Component 4		3-5	xxx-xxx-x	Xi	R36/37/38

Section 3. Hazards Identification

United States 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 product.

Emergency Overview WARNING!
BIRTH DEFECT HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE BIRTH DEFECT.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
KIDNEYS, LUNGS, NERVOUS SYSTEM, REPRODUCTIVE SYSTEM, LIVER,
RESPIRATORY TRACT, SKIN, EYES, CENTRAL NERVOUS SYSTEM, EYE, LENS OR
CORNEA.
Avoid exposure during pregnancy.

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

Potential Acute Health Effects Slightly hazardous in case of ingestion, of inhalation.

Carcinogenic Effects Data **CARCINOGENIC EFFECTS:** Classified None. by NIOSH [Ethylene Glycol]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethylene Glycol].
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Not available.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged exposure is not known to aggravate medical condition.

Overexposure /Signs/Symptoms Not available.

Europe

Classification Not controlled under dsd (Europe).

Continued on Next Page

Physical/chemical hazards	Not applicable.
Human health hazards	Not applicable.
Environmental hazards	Not applicable.

See Toxicological Information (section 11)

Section 4. First Aid Measures

Notice to Reader Get immediate medical attention.

Effects and symptoms

Inhalation	Slightly hazardous in case of inhalation.
Ingestion	Slightly hazardous in case of ingestion.
Skin Contact	Irritation of the product in case of skin contact: Not available. Sensitization of the product: Not available.
Eye Contact	Not available.
Aggravating conditions	Repeated or prolonged exposure is not known to aggravate medical condition.

First-Aid Measures

Inhalation	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
Ingestion	Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.
Skin Contact	Wash with soap and water. Get medical attention if irritation develops. Cold water may be used.
Eye Contact	Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.
Notes to Physician	Not available.
Protection of first-aiders	Not available.

Section 5. Fire Fighting Measures

Flammability of the Product	Non-flammable.
Flash Points	Not applicable.
Fire Hazards in Presence of Various Substances	Not applicable.
Fire Fighting Media and Instructions	Not applicable.
Protective Clothing (Fire)	Not applicable.
Hazardous thermal (de)composition products	Not applicable.

Section 6. Accidental Release Measures

Personal precautions	Safety glasses. Lab coat. Gloves.
Environmental Precautions and Clean-up Methods	Absorb with an inert material and put the spilled material in an appropriate waste disposal. Neutralize the residue with a dilute solution of acetic acid. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
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. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Continued on Next Page

Section 7. Handling and Storage

Handling Avoid breathing vapors or spray mists.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area. Store between 2 to 8°C (35.6 to 46.4°F).

Intended Use Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Packaging materials

Suitable / Not suitable Use original container.

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.

Exposure Limit Values

Ingredient Name

Occupational Exposure Limits

United States

1) Ethylene Glycol

CEIL: 100 (mg/m³) from ACGIH (TLV) [United States] [2000] Inhalation

2) Enhancer Solution Component 4

CEIL: 50 (ppb) from OSHA (PEL) [United States] [1989] Inhalation
Not available.

Sweden

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

TWA: 10 STEL: 50 CEIL: 20 (ppm) from AFS [Sweden] [1996] SKIN

4) Enhancer Solution Component 4

Not available.

Denmark

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

TWA: 10 (ppm) from Arbejdstilsynet [Denmark] [1996] SKIN

4) Enhancer Solution Component 4

Not available.

Norway

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

TWA: 10 CEIL: 125 (mg/m³) from Arbejdstilsynet [Norway] [1996] Inhalation

4) Enhancer Solution Component 4

Not available.

France

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

STEL: 50 (ppm) from INRS [France] [1999] Inhalation

4) Enhancer Solution Component 4

Not available.

Netherlands

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

TWA: 26 (mg/m³) from Arbeidsinspectie [Netherlands] [1999] Inhalation

4) Enhancer Solution Component 4

Not available.

Germany

1) Enhancer Solution Component 1

Not available.

2) Enhancer Solution Component 2

Not available.

3) Ethylene Glycol

TWA: 10 CEIL: 10 (ppm) from BAuA [Germany] [1999] SKIN

4) Enhancer Solution Component 4

Not available.

Personal Protection

Eyes Splash goggles.

Body Lab coat.

Hands Gloves.

Respiratory Respirator is not needed under normal and intended conditions of use, if exposures are kept below established limits.

Protective Clothing
(Pictograms)

Continued on Next Page



Section 9. Physical and Chemical Properties

Physical State and Appearance Liquid.

Odor Not available.

Molecular Weight Not applicable.

Taste Not available.

pH (1% Soln/Water) Basic.

Color Not available.

Boiling/Condensation Point The lowest known value is 100°C (212°F) (Milli-Q Water). Weighted average: 101.54°C (214.8°F)

Melting/Freezing Point May start to solidify at -0.1°C (31.8°F) based on data for: Milli-Q Water. Weighted average: -0.3°C (31.5°F)

Specific Gravity Weighted average: 1 (Water = 1)

Vapor Pressure The highest known value is 2.3 kPa (@ 20°C) (Milli-Q Water). Weighted average: 2.26 kPa (@ 20°C)

Vapor Density The highest known value is 2.14 (Air = 1) (Ethylene Glycol). Weighted average: 0.64 (Air = 1)

Evaporation Rate 0.36 (Milli-Q Water) compared to Butyl acetate.

LogK_{ow} The product is much more soluble in water.

Dispersion Properties See solubility in water, methanol, diethyl ether, acetone.

Solubility Easily soluble in cold water, hot water, methanol, diethyl ether.
Partially soluble in acetone.
Very slightly soluble in n-octanol.

Section 10. Stability and Reactivity

Stability and Reactivity The product is stable.

Conditions to avoid Not available.

Materials to avoid Slightly reactive to reactive with oxidizing agents, metals, acids, alkalis.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Not applicable.

Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD50): 1650 mg/kg [Cat.]. (Ethylene Glycol).

Acute dermal toxicity (LD50): 9530 mg/kg [Rabbit.]. (Ethylene Glycol).

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified None. by NIOSH [Ethylene Glycol]. Classified A4 (Not classifiable for human or animal.) by ACGIH [Ethylene Glycol].

DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [PROVEN] [Ethylene Glycol].

Other Toxic Effects on Humans Slightly hazardous in case of ingestion, of inhalation.

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans Not available.

Special Remarks on Other Toxic Effects on Humans To the best of our knowledge, the toxicological properties of this product have not been thoroughly investigated.



Section 12. Ecological Information

Mobility	Not available.
Persistence/degradability	Not available.
Bioaccumulative potential	Not available.
Ecotoxicity	Not available.
Germany water class	VCI WGK: No products were found.



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.



Section 14. Transport Information

Contact the supplier for all information regarding the proper transportation method for this material.



Section 15. Regulatory Information

Label Requirements (Europe)

This product is not classified according to the EU regulations.

HCS Classification

Target organ effects.
Reproductive toxins.

U.S. Federal Regulations TSCA 8(b) inventory: Enhancer Solution Component 1; Ethylene Glycol; Enhancer Solution Component 4; Enhancer Solution Component 5; Milli-Q

Water

TSCA 8(d) H and S data reporting: Ethylene Glycol

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: Ethylene Glycol

SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Ethylene Glycol: immediate health hazard, delayed health hazard

SARA 313 toxic chemical notification and release reporting: Ethylene Glycol 1.5%

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 D-2A: Material causing other toxic effects (VERY TOXIC).

CEPA DSL: Enhancer Solution Component 1; Ethylene Glycol; Enhancer Solution Component 4; Enhancer Solution Component 5; Milli-Q Water

International Regulations

EINECS Not available.

DSCL (EEC) This product is not classified according to the EU regulations.

International Lists

Continued on Next Page

Australia (NICNAS): Enhancer Solution Component 1; Ethylene Glycol; Enhancer Solution Component 4; Enhancer Solution Component 5; Milli-Q Water

Germany water class: Ethylene Glycol

VCI WGK: No products were found.

Korea (TCCL): Ethylene Glycol; Enhancer Solution Component 4; Enhancer Solution Component 5; Milli-Q Water

Philippines (RA6969): Enhancer Solution Component 1; Ethylene Glycol; Enhancer Solution Component 4; Enhancer Solution Component 5; Milli-Q Water

State Regulations
 Pennsylvania RTK: Ethylene Glycol: (environmental hazard, generic environmental hazard)
 Massachusetts RTK: Ethylene Glycol
 New Jersey: Ethylene Glycol
California prop. 65: No products were found.

Section 16. Other Information

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

Health	*	1
Fire Hazard		0
Reactivity		0
Personal Protection		a

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



References Not available.

History of Document Changes Any information changes since last document version are marked with a triangle symbol. ▶

Full text of R-Phrases referenced under headings 2 and 3:
 Irritating to eyes, respiratory system and skin.
 Not applicable.
 Harmful in contact with skin and if swallowed.
 Irritating to eyes, respiratory system and skin.
 Irritating to eyes, respiratory system and skin.

Intended Use Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

Validated by Pierce Administration on 2/4/2003.

Verified by Pierce Administration.

Date of Previous Issue

2/4/2003

Printed 2/4/2003.

Version

3

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.