

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

Responsible Name Pierce Administration

? **Section 1. Chemical Product and Company Identification**

Product name **PharmaLink Coupling Reagent**

Product No. 0077168

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

In Case of Emergency CALL CHEMTREC:

800.424.9300
OUTSIDE US:
202.483.7616

Print Date 4/2/2003

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MSDS# 5418

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

Ingredient Name	CAS No.	%	EC Number	Symbol	R-Phrases
1) Methanol	67-56-1	10-20	200-659-6	F, T	R11, R23/24/25, R39/23/24/25
2) Formaldehyde	50-00-0	25-45	200-001-8	T	R23/24/25, R34, R40, R43

 **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 DANGER!

CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS.
CANCER HAZARD
CONTAINS MATERIAL WHICH CAN CAUSE CANCER
HIGHLY FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
LUNGS, MUCOUS MEMBRANES, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, EYES, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
MAY CAUSE ALLERGIC SKIN REACTION.

Risk of cancer depends on duration and level of exposure. Keep away from heat, sparks and flame. Do not get in eyes, on skin or on clothing. Avoid contact with eyes, skin and 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.

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

Potential Acute Health Effects Hazardous in case of skin contact (sensitizer). Slightly hazardous in case of ingestion. Non-corrosive for skin. Non-hazardous in case of inhalation. Non-corrosive to the eyes. Non-corrosive for lungs. Liquid or spray mist may produce tissue damage particularly on mucous membranes of eyes, mouth and respiratory tract. Skin contact may produce burns. Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Severe over-exposure can result in death.

Carcinogenic Effects Data **CARCINOGENIC EFFECTS:** Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Methanol]. Classified + (Proven.) by OSHA+ (Proven.) by NIOSH [Formaldehyde]. Classified 3 (Possible for human.) by European Union [Formaldehyde]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde].

MUTAGENIC EFFECTS: Not available.

TERATOGENIC EFFECTS: Not available.

Medical Conditions Aggravated by Overexposure: Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection.

Overexposure /Signs/Symptoms Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.
Not available.

Europe

Classification	R11, R23/24/25, R34, R39/23/24/25, R40, R43
Physical/chemical hazards	Highly flammable.
Human health hazards	Toxic by inhalation, in contact with skin and if swallowed. Causes burns. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Possible risks of irreversible effects. May cause sensitization by skin contact.
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** Inhalation of the spray mist may produce severe irritation of respiratory tract, characterized by coughing, choking, or shortness of breath. Over-exposure by inhalation may cause respiratory irritation. May be fatal if inhaled.
- Ingestion** May be fatal if swallowed. May cause burns to mouth, throat, and stomach.
- Skin Contact** Irritation of the product in case of skin contact: Not available.
Hazardous in case of skin contact (sensitizer). Non-corrosive for skin. Skin contact may produce burns. Severe over-exposure can result in death.
- Eye Contact** Non-corrosive to the eyes.
- Aggravating conditions** Repeated or prolonged contact with spray mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to spray mist may produce respiratory tract irritation leading to frequent attacks of bronchial infection. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

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 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. Loosen tight clothing such as a collar, tie, belt or waistband. 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. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.
- 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 immediately.
- Notes to Physician** Not available.
- Protection of first-aiders** Not available.

Section 5. Fire Fighting Measures

Flammability of the Product Flammable.

Flash Points The lowest known value is CLOSED CUP: 12°C (53.6°F). OPEN CUP: 15.9°C (60.6°F). (Methanol)

Fire Hazards in Presence of Various Substances Not considered to be flammable.

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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.

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

Special Remarks on Fire Hazards Flammable/combustible materials.
May be ignited by heat, sparks or flames.
Vapors may form explosive mixtures with air.
Vapors may travel to source of ignition and flash back.
Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks).
Vapor explosion hazard indoors, outdoors or in sewers.
Some may polymerize (P) explosively when heated or involved in a fire.
Runoff to sewer may create fire or explosion hazard.
Containers may explode when heated.
Many liquids are lighter than water. (Formaldehyde)

Hazardous thermal (de)composition products These products are carbon oxides (CO, CO₂).

Section 6. Accidental Release Measures

Personal precautions Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.

Environmental Precautions and Clean-up Methods Flammable liquid. Corrosive 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 curtain to divert vapor drift. 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 sodium carbonate.** 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 sodium carbonate.**

◇ 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).

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. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Exposure Limit Values

Ingredient Name

Occupational Exposure Limits

United States

1) Methanol

TWA: 200 STEL: 250 CEIL: 200 (ppm) from ACGIH (TLV) [United States] [2000] SKIN

2) Formaldehyde

TWA: 200 STEL: 250 (ppb) from OSHA (PEL) [United States] [1989] SKIN
CEIL: 0.37 (mg/m³) from ACGIH (TLV) [United States] [1994] Inhalation
TWA: 0.75 STEL: 2 (ppb) from OSHA (PEL) [United States] [1989] Inhalation

Sweden

1) Methanol

TWA: 200 STEL: 350 CEIL: 250 (ppm) from AFS [Sweden] [1996] SKIN

2) Formaldehyde

TWA: 0.6 STEL: 1.2 (mg/m³) from AFS [Sweden] [1996] Inhalation

Denmark

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1) Methanol 2) Formaldehyde	TWA: 200 (ppm) from Arbejdstilsynet [Denmark] [1996] SKIN TWA: 0.4 CEIL: 0.4 (mg/m ³) from Arbejdstilsynet [Denmark] [1996] Inhalation
Norway	
1) Methanol 2) Formaldehyde	TWA: 100 STEL: 325 (ppm) from Arbejdstilsynet [Norway] [1996] SKIN Not available.
France	
1) Methanol 2) Formaldehyde	TWA: 200 STEL: 1300 (ppm) from INRS [France] [1999] Inhalation TWA: 0.5 STEL: 1 (ppm) from INRS [France] [1996]
Netherlands	
1) Methanol 2) Formaldehyde	TWA: 200 (ppm) from Arbeidsinspectie [Netherlands] [2000] Inhalation TWA: 1.5 STEL: 3 (mg/m ³) from Arbeidsinspectie [Netherlands] [1999] Inhalation
Germany	
1) Methanol 2) Formaldehyde	TWA: 200 STEL: 250 CEIL: 800 (ppm) from BAuA [Germany] [1999] SKIN TWA: 0.6 CEIL: 0.6 (mg/m ³) from BAuA [Germany] [1997] SKIN

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.**Feet** Boots.Protective Clothing
(Pictograms)**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)** Acidic.**Color** Not available.**Boiling/Condensation Point** The lowest known value is 64.55°C (148.2°F) (Methanol). Weighted average: 92.91°C (199.2°F)**Melting/Freezing Point** May start to solidify at 0°C (32°F) based on data for: Water. Weighted average: -46.59°C (-51.9°F)**Specific Gravity** Weighted average: 0.97 (Water = 1)**Vapor Pressure** The highest known value is 12.9 kPa (@ 20°C) (Methanol). Weighted average: 4.42 kPa (@ 20°C)**Vapor Density** The highest known value is 1.1 (Air = 1) (Methanol). Weighted average: 0.72 (Air = 1)**Odor Threshold** The highest known value is 100 ppm (Methanol) Weighted average: 25.87 ppm**Evaporation Rate** 0.36 (Water) compared to Butyl acetate.**Ionicity (in Water)** Non-ionic.**Dispersion Properties** See solubility in water.**Solubility** Easily soluble in cold water, hot water.



Section 10. Stability and Reactivity

Stability and Reactivity Unstable. (Formaldehyde)

Conditions to avoid Not available.

Materials to avoid Non-reactive with oxidizing agents, acids.

Hazardous Decomposition Products These products are carbon oxides (CO, CO₂).



Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD₅₀): 42 mg/kg [Mouse]. (Formaldehyde).

Acute dermal toxicity (LD₅₀): 15800 mg/kg [Rabbit]. (Methanol).

Chronic Effects on Humans **CARCINOGENIC EFFECTS:** Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Methanol]. Classified + (Proven.) by OSHA+ (Proven.) by NIOSH [Formaldehyde]. Classified 3 (Possible for human.) by European Union [Formaldehyde]. Classified A2 (Suspected for human.) by ACGIH, 2A (Probable for human.) by IARC [Formaldehyde].

Other Toxic Effects on Humans Hazardous in case of eye contact (corrosive), of inhalation (lung corrosive). Slightly hazardous in case of ingestion. Non-irritant for lungs.

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 Not available.



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)

R11- Highly flammable.
 R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
 R34- Causes burns.
 R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
 R40- Possible risks of irreversible effects.
 R43- May cause sensitization by skin contact.

S1/2- Keep locked up and out of the reach of children.
 S24- Avoid contact with skin.
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37- Wear suitable protective clothing and gloves.
 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).
 S46- If swallowed, seek medical advice immediately and show this container or label.



Highly flammable, Toxic

HCS Classification

Contains material which can cause cancer.
Highly toxic.
Flammable liquid having a flash point lower than 37.8°C (100°F).
Target organ effects.
Corrosive material

U.S. Federal Regulations TSCA 8(b) inventory: Methanol; Water; Formaldehyde
 TSCA 8(d) H and S data reporting: Formaldehyde
 SARA 302/304/311/312 extremely hazardous substances: Formaldehyde
 SARA 302/304 emergency planning and notification: Formaldehyde
 SARA 302/304/311/312 hazardous chemicals: Methanol; Formaldehyde
 SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Methanol: fire, immediate health hazard, delayed health hazard;
 Formaldehyde: fire, immediate health hazard, delayed health hazard
 SARA 313 toxic chemical notification and release reporting: Methanol 12.5%; Formaldehyde 37%

Clean Water Act (CWA) 307: No products were found.
 Clean Water Act (CWA) 311: Formaldehyde
 Clean air act (CAA) 112 accidental release prevention: Methanol; Formaldehyde
 Clean air act (CAA) 112 regulated flammable substances: Methanol
 Clean air act (CAA) 112 regulated toxic substances: Formaldehyde

WHMIS (Canada) CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).
 CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC).
 CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
 CLASS E: Corrosive liquid.

CEPA DSL: Methanol; Water; Formaldehyde

CEPA NDSL: Formaldehyde

International Regulations

EINECS Not available.

DSCL (EEC) R11- Highly flammable.
 R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
 R34- Causes burns.
 R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
 R40- Possible risks of irreversible effects.
 R43- May cause sensitization by skin contact.

International Lists

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Australia (NICNAS): Methanol; Water; Formaldehyde

Germany water class: Methanol

VCI WGK: No products were found.

Korea (TCCL): Methanol; Water; Formaldehyde

Philippines (RA6969): Methanol; Water; Formaldehyde

State Regulations Pennsylvania RTK: Methanol: (environmental hazard, generic environmental hazard); Formaldehyde: (special hazard, environmental hazard, generic environmental hazard)

Florida: Methanol

Massachusetts RTK: Methanol; Formaldehyde

New Jersey: Methanol; Formaldehyde

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Formaldehyde

California prop. 65 (no significant risk level): Formaldehyde

California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Formaldehyde

Section 16. Other Information

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

Health	*	3
Fire Hazard		4
Reactivity		0
Personal Protection		

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:

- Toxic by inhalation, in contact with skin and if swallowed.
- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
- Toxic by inhalation, in contact with skin and if swallowed.
- Causes burns.
- Possible risks of irreversible effects.
- May cause sensitization by skin contact.

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

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Verified by Pierce Administration.

Date of Previous Issue No Previous Validation

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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.