PIERCE
a Perbio Science Company

Eng

Material Safety Data Sheet

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

Responsible Name **Pierce Administration**

Section 1. Chemical Product and Company Identification

Product name **Coomassie Plus™ Protein Assay Reagent**

Product No. 0023238 1900245

Supplier

In USA:
Pierce
P.O. Box 117
Rockford, IL 61105
USA
815.968.0747 or
1.800.874.3723

In Europe:
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

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

Print Date 3/17/2004
Validation Date **3/17/2004**
MSDS# 3596

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) Phosphoric Acid	7664-38-2	7-10	231-633-2	Xn	R22, R37/38, R41
2) Methanol	67-56-1	3-5	200-659-6	F, T	R11, R23/24/25, R39/23/24/25
3) Ingredient Name #3		0.1-1	205-788-1	Xn	R20/21/22, 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 DANGER!
CONTAINS MATERIAL WHICH CAUSES DAMAGE TO THE FOLLOWING ORGANS:
LUNGS, GASTROINTESTINAL TRACT, RESPIRATORY TRACT, SKIN, EYES,
CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA.
MAY BE HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED.
Avoid prolonged 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. Eye contact. Inhalation. Ingestion.

Potential Acute Health Effects Slightly hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant, corrosive), of ingestion, of inhalation (lung irritant, lung corrosive). 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.

Carcinogenic Effects Data **CARCINOGENIC EFFECTS**: Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Methanol]. Classified None. by NIOSH [Ingredient Name #3]. Classified 4 (No evidence.) by NTP, None. by OSHA [Ingredient Name #2].
MUTAGENIC EFFECTS: Not available.
TERATOGENIC EFFECTS: Classified None. for human [Ingredient Name #3].

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 Not available.

Europe

Continued on Next Page

Classification	**R20/21/22, R40/20/21/22**
Physical/chemical hazards	Not applicable.
Human health hazards	Harmful by inhalation, in contact with skin and if swallowed. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
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 (lung irritant, lung corrosive). 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.
Ingestion	May be fatal if swallowed. May cause burns to mouth, throat, and stomach.
Skin Contact	Sensitization of the product: Not available. Slightly hazardous in case of skin contact (corrosive, irritant). Skin contact may produce burns. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.
Eye Contact	Slightly hazardous in case of eye contact (irritant, corrosive).
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.

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. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Skin Contact	In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
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 if irritation occurs.
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	Face shield. Full suit. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves. Boots.
Environmental Precautions and Clean-up Methods	Corrosive liquid. 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. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. 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.

Continued on Next Page

Section 7. Handling and Storage

Handling Avoid prolonged contact with eyes, skin, and clothing. Do not ingest. Avoid breathing vapors or spray mists. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

Storage Keep container tightly closed. Keep container in a cool, well-ventilated area.

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) Phosphoric Acid	TWA: 1 STEL: 3 (mg/m^3) from OSHA (PEL) [United States] [1989] Inhalation
2) Methanol	TWA: 200 STEL: 250 CEIL: 200 (ppm) from ACGIH (TLV) [United States] [2000] SKIN TWA: 200 STEL: 250 (ppb) from OSHA (PEL) [United States] [1989] SKIN
Sweden	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 200 STEL: 350 CEIL: 250 (ppm) from AFS [Sweden] [1996] SKIN
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.
Denmark	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 200 (ppm) from Arbejdstilsynet [Denmark] [1996] SKIN
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.
Norway	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 100 STEL: 325 (ppm) from Arbeidstilsynet [Norway] [1996] SKIN
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.
France	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 200 STEL: 1300 (ppm) from INRS [France] [1999] Inhalation
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.
Netherlands	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 200 (ppm) from Arbeidsinspectie [Netherlands] [2000] Inhalation
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.
Germany	
1) Phosphoric Acid	Not available.
2) Methanol	TWA: 200 STEL: 250 CEIL: 800 (ppm) from BAuA [Germany] [1999] SKIN
3) Ingredient Name #3	Not available.
4) Ingredient Name #2	Not available.

Personal Protection

Eyes Splash goggles.
Body Lab coat.

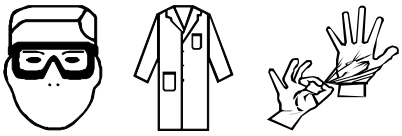
Continued on Next Page

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) Neutral.

Color Not available.

Boiling/Condensation Point The lowest known value is 64.55°C (148.2°F) (Methanol). Weighted average: 103.72°C (218.7°F)

Melting/Freezing Point May start to solidify at 42.27°C (108.1°F) based on data for: Phosphoric Acid. Weighted average: -0.43°C (31.2°F)

Specific Gravity Weighted average: 1.03 (Water = 1)

Vapor Pressure The highest known value is 12.9 kPa (@ 20°C) (Methanol). Weighted average: 2.54 kPa (@ 20°C)

Vapor Density The highest known value is 3.4 (Air = 1) (Phosphoric Acid). Weighted average: 0.89 (Air = 1)

Odor Threshold The highest known value is 100 ppm (Methanol)

Evaporation Rate 0.36 (Milli-Q 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 The product is stable.

Conditions to avoid Not available.

Materials to avoid Reactive with organic materials.

Hazardous Polymerization Will not occur.

Hazardous Decomposition Products Not applicable.

Section 11. Toxicological Information

Toxicity to Animals Acute oral toxicity (LD50): 1530 mg/kg [Rat]. (Phosphoric Acid).
Acute dermal toxicity (LD50): 2470 mg/kg [Rabbit]. (Phosphoric Acid).

Chronic Effects on Humans **CARCINOGENIC EFFECTS**: Classified 4 (No evidence.) by NTP, None. by OSHA, None. by NIOSH [Methanol]. Classified None. by NIOSH [Ingredient Name #3]. Classified 4 (No evidence.) by NTP, None. by OSHA [Ingredient Name #2].
TERATOGENIC EFFECTS: Classified None. for human [Ingredient Name #3].

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

Special Remarks on Toxicity to Animals Not available.

Special Remarks on Chronic Effects on Humans May be Harmful by inhalation, ingestion or skin absorption. May cause irritation. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. (Coomassie Blue G-250)

Continued on Next Page

Special Remarks on Other Toxic Effects on Humans May be Harmful by inhalation, ingestion or skin absorption. May cause irritation. To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated. (Coomassie Blue G-250)

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)

R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R40/20/21/22- Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

S36/37- Wear suitable protective clothing and gloves.

Harmful

HCS Classification **Target organ effects.**
Corrosive material

U.S. Federal Regulations TSCA 8(b) inventory: Water; Phosphoric Acid; Methanol; Ingredient Name #3; Ingredient Name #2; Milli-Q Water; Coomassie Blue G-250
TSCA 8(d) H and S data reporting: Phosphoric Acid; Ingredient Name #3
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: Phosphoric Acid; Methanol; Ingredient Name #3
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Phosphoric Acid: immediate health hazard; Methanol: fire, immediate health hazard, delayed health hazard; Ingredient Name #3: immediate health hazard, delayed health hazard
SARA 313 toxic chemical notification and release reporting: Phosphoric Acid 8.5%; Methanol 4%

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: Phosphoric Acid

Clean air act (CAA) 112 accidental release prevention: Methanol

Continued on Next Page

Clean air act (CAA) 112 regulated flammable substances: Methanol

Clean air act (CAA) 112 regulated toxic substances: No products were found.

WHMIS (Canada) CLASS D-2A: Material causing other toxic effects (VERY TOXIC).
CLASS E: Corrosive liquid.

CEPA DSL: Water; Phosphoric Acid; Methanol; Ingredient Name #3; Ingredient Name #2; Milli-Q Water; Coomassie Blue G-250

International Regulations

EINECS Not available.

DSCL (EEC) R20/21/22- Harmful by inhalation, in contact with skin and if swallowed.
R40/20/21/22- Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

International Lists Australia (NICNAS): Water; Phosphoric Acid; Methanol; Ingredient Name #3; Ingredient Name #2; Milli-Q Water; Coomassie Blue G-250

Germany water class: Methanol; Ingredient Name #3; Ingredient Name #2

VCI WGK: No products were found.

Korea (TCCL): Water; Phosphoric Acid; Methanol; Ingredient Name #3; Ingredient Name #2; Milli-Q Water; Coomassie Blue G-250

Philippines (RA6969): Water; Phosphoric Acid; Methanol; Ingredient Name #3; Ingredient Name #2; Milli-Q Water; Coomassie Blue G-250

State Regulations Pennsylvania RTK: Phosphoric Acid: (environmental hazard); Methanol: (environmental hazard, generic environmental hazard)
Florida: Methanol
Massachusetts RTK: Phosphoric Acid; Methanol
New Jersey: Phosphoric Acid; Methanol
California prop. 65: No products were found.

Section 16. Other Information

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

Health	*	2
Fire Hazard		0
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:
Harmful if ingested.
Irritating to respiratory system and skin.
Risk of serious damage to eyes.
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.
Harmful by inhalation, in contact with skin and if swallowed.
Irritating to eyes, respiratory system and skin.
Not applicable.

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

Validated by Pierce Administration on 3/17/2004.

Verified by Pierce Administration. **Date of Previous Issue 12/19/2003**

Printed 3/17/2004. **Version 2.01**

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.