

Material Safety Data Sheet

1. Product and company identification

Product name	: Coomassie Plus™ Protein Assay Reagent	
Supplier	: Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 or 800.874.3723	Manufacturer : Thermo Fisher Scientific Pierce Biotechnology P.O. Box 117 Rockford, IL 61105 United States 815.968.0747 800.874.3723
Product No.	: 0023238 1856210 1856268 1900245	
MSDS #	: 3923	
Validation date	: 8/13/2010.	
Print date	: 8/13/2010.	
Responsible name	: MSDS Specialist	
In case of emergency	: CHEMTREC: 800.424.9300 OUTSIDE US: 202.483.7616	Use of Substance/Preparation : Refer to the instruction booklet for proper and intended use. Otherwise, contact supplier for specific applications.

2. Hazards identification

Physical state	: Liquid.
OSHA/HCS status	: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	: DANGER ! CAUSES EYE AND SKIN BURNS. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE. Toxic by inhalation, in contact with skin and if swallowed. Corrosive to eyes and skin. Causes burns. Avoid exposure - obtain special instructions before use. Do not breathe vapor or mist. Do not ingest. Do not get in eyes or on skin or clothing. Contains material that can cause target organ damage. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.
Routes of entry	: Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects	
Inhalation	: Toxic by inhalation. May give off gas, vapor or dust that is very irritating or corrosive to the respiratory system.
Ingestion	: Toxic if swallowed. May cause burns to mouth, throat and stomach.
Skin	: Corrosive to the skin. Causes burns. Toxic in contact with skin.
Eyes	: Corrosive to eyes. Causes burns.
Potential chronic health effects	
Chronic effects	: Contains material that can cause target organ damage.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.

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2. Hazards identification

Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Target organs	: Contains material which causes damage to the following organs: kidneys, lungs, liver, heart, upper respiratory tract, eye, lens or cornea. Contains material which may cause damage to the following organs: blood, gastrointestinal tract, skin, bone marrow, central nervous system (CNS).

Over-exposure signs/symptoms

Inhalation	: No specific data.
Ingestion	: Adverse symptoms may include the following: stomach pains
Skin	: Adverse symptoms may include the following: pain or irritation redness blistering may occur
Eyes	: Adverse symptoms may include the following: pain watering redness
Medical conditions aggravated by over-exposure	: Pre-existing respiratory, skin and digestive disorders and disorders involving any other target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

The preparation is classified as dangerous according to Directive 1999/45/EC and its amendments.

Classification	: C; R34
Human health hazards	: Causes burns.
See toxicological information (section 11)	

3. Composition/information on ingredients

United States

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Phosphoric Acid	7664-38-2	7 - 10
Methanol	67-56-1	3 - 5

Europe

Substance/preparation		: Preparation			
<u>Ingredient name</u>	<u>CAS number</u>	<u>%</u>	<u>EC number</u>	<u>Classification</u>	
Phosphoric Acid	7664-38-2	7 - 10	231-633-2	C; R34	[1] [2]
Methanol	67-56-1	3 - 5	200-659-6	F; R11	[1] [2]
				T; R23/24/25, R39/23/24/25	

There are no ingredients or additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

[1] Substance classified with a health or environmental hazard

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3 . Composition/information on ingredients

[2] Substance with a workplace exposure limit

Occupational exposure limits, if available, are listed in section 8.

4 . First aid measures

- Inhalation** : Get medical attention immediately. Move exposed person to fresh air. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. Remove dentures if any. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Get medical attention immediately. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Eye contact** : Get medical attention immediately. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Chemical burns must be treated promptly by a physician.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing or wear gloves.

See section 11 for more detailed information on health effects and symptoms.

5 . Fire-fighting measures

- Flammability of the product** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Extinguishing media**
- Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Not suitable** : None known.
- Special exposure hazards** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon oxides
phosphorus oxides

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5 . Fire-fighting measures

- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.
- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Storage** : Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Product name

Exposure limits

United States

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8 . Exposure controls/personal protection

phosphoric acid	ACGIH (United States). TWA: 1 mg/m³ STEL: 3 mg/m³ TWA: 1 mg/m³ STEL: 3 mg/m³ NIOSH (United States, 0/1994). TWA: 1 mg/m³ STEL: 3 mg/m³ OSHA (United States, 0/1989). TWA: 1 mg/m³ STEL: 3 mg/m³ ACGIH TLV (United States, 1/2008). STEL: 3 mg/m³ 15 minute(s). TWA: 1 mg/m³ 8 hour(s). NIOSH REL (United States, 6/2008). STEL: 3 mg/m³ 15 minute(s). TWA: 1 mg/m³ 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 1 mg/m³ 8 hour(s). OSHA PEL 1989 (United States, 3/1989). STEL: 3 mg/m³ 15 minute(s). TWA: 1 mg/m³ 8 hour(s).
methanol	ACGIH (United States, 0/2003). Skin CEIL: 200 ppm STEL: 250 ppm TWA: 200 ppm MSHA (United States). Skin TWA: 260 mg/m³ NIOSH (United States). Skin STEL: 250 ppm TWA: 200 ppm OSHA (United States, 0/2003). Skin STEL: 250 ppm TWA: 200 ppm ACGIH TLV (United States, 1/2008). Skin STEL: 328 mg/m³ 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 262 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s). NIOSH REL (United States, 6/2008). Skin STEL: 325 mg/m³ 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m³ 10 hour(s). TWA: 200 ppm 10 hour(s). OSHA PEL (United States, 11/2006). TWA: 260 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s). OSHA PEL 1989 (United States, 3/1989). Skin STEL: 325 mg/m³ 15 minute(s). STEL: 250 ppm 15 minute(s). TWA: 260 mg/m³ 8 hour(s). TWA: 200 ppm 8 hour(s).

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8 . Exposure controls/personal protection

Europe	
phosphoric acid ...%	EU OEL (Europe, 4/2006). Notes: Indicative Short term limit value: 2 mg/m³ 15 minute(s). Limit value: 1 mg/m³ 8 hour(s). EU OEL (Europe, 4/2006). Skin Notes: Indicative Limit value: 260 mg/m³ 8 hour(s). Limit value: 200 ppm 8 hour(s).
methanol	

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	: Liquid.
Color	: Brown. [Dark]

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10 . Stability and reactivity

Chemical stability	: The product is stable. Under normal conditions of storage and use, hazardous polymerization will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Possibility of hazardous reactions	: Will not occur.

11 . Toxicological information

United States

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	LD50 Dermal	Rabbit	15800 mg/kg	-
	LD50 Intraperitoneal	Rat	7529 mg/kg	-
	LD50 Intravenous	Rat	2131 mg/kg	-
	LD50 Oral	Rat	5600 mg/kg	-
	TDLo Oral	Rat	8 g/kg	-
	TDLo Intraperitoneal	Rat	3490 mg/kg	-
	TDLo Oral	Rat - Female	3500 mg/kg	-
	TDLo Intraperitoneal	Rat	3000 mg/kg	-
	TDLo Oral	Rat	3 g/kg	-
	TDLo Oral	Rat	3 g/kg	-
phosphoric acid	LC50 Inhalation Vapor	Rat	83.2 mg/L	4 hours
	LC50 Inhalation Vapor	Rat	64000 ppm	4 hours
	LD50 Oral	Rat	1.25 g/kg	-

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
methanol	-	-	-	None.	-	None.

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Europe

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11 . Toxicological information

Chronic effects	: No known significant effects or critical hazards.
Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: No known significant effects or critical hazards.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*
DOT Classification	UN3264	Corrosive liquid, acidic, inorganic, n.o.s. (phosphoric acid)	8	II
IATA-DGR Class	Not available.	Not available.	Not available.	-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Toxic material
Corrosive material
Target organ effects

U.S. Federal regulations : **United States inventory (TSCA 8b)**: All components are listed or exempted. TSCA 8(d) H and S data reporting: phosphoric acid

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15 . Regulatory information

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
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 phosphoric acid: Immediate (acute) health hazard; methanol: Fire hazard, Immediate (acute) health hazard, Delayed (chronic) health hazard

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

Clean Water Act (CWA) 311: phosphoric acid; sodium hydroxide

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.

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	: phosphoric acid	7664-38-2	7 - 10
	: methanol	67-56-1	3 - 5
Supplier notification	: methanol	67-56-1	3 - 5

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

Canada

WHMIS (Canada) : Class D-1B: Material causing immediate and serious toxic effects (Toxic).
 Class D-2A: Material causing other toxic effects (Very toxic).
 Class D-2B: Material causing other toxic effects (Toxic).
 Class E: Corrosive material

Canadian lists : **CEPA Toxic substances:** None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: The following components are listed: Phosphorus (total);Methanol
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.

Canada inventory : **Canada inventory:** All components are listed or exempted.

EU regulations

Hazard symbol or symbols :



Corrosive

Risk phrases : R34- Causes burns.

Safety phrases : S24- Avoid contact with skin.
 S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S35- This material and its container must be disposed of in a safe way.
 S37- Wear suitable gloves.

International regulations

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15 . Regulatory information

International lists : **Australia inventory (AICS):** All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Korea inventory (KECI): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.
Japan inventory (ENCS): All components are listed or exempted.

16 . Other information

Label requirements : CAUSES EYE AND SKIN BURNS. HARMFUL IF INHALED, ABSORBED THROUGH SKIN OR SWALLOWED. CONTAINS MATERIAL THAT CAN CAUSE TARGET ORGAN DAMAGE.

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

Health	3
Flammability	0
Physical hazards	0

The customer is responsible for determining the PPE code for this material.

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



Date of printing : 8/13/2010.

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Date of previous issue : 8/8/2008.

Version : 1.02

Indicates information that has changed from previously issued version.

Full text of R-phrases referred to in sections 2 and 3 - Europe : R11- Highly flammable.
 R23/24/25- Toxic by inhalation, in contact with skin and if swallowed.
 R39/23/24/25- Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
 R34- Causes burns.

Full text of classifications referred to in sections 2 and 3 - Europe : F - Highly flammable
 T - Toxic
 C - Corrosive

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.

This product has been classified according to the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

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