Material Safety Data Sheet

SIEMENS

Emit® 2000 Phenobarbital Calibrators

MSDS no. SY4D109

1 . Product and company identification

Product name : Emit® 2000 Phenobarbital Calibrators

Synonym : Emit ® 2000 Phenobarbital Calibrator 0
Emit ® 2000 Phenobarbital Calibrator 5
Emit ® 2000 Phenobarbital Calibrator 10
Emit ® 2000 Phenobarbital Calibrator 20
Emit ® 2000 Phenobarbital Calibrator 40
Emit ® 2000 Phenobarbital Calibrator 80 Synonym

Code : 4D109

Material uses : Diagnostic agents.

Product type : Liquid.

Manufactured/supplied : Siemens Healthcare Diagnostics Inc.
1717 Deerfield Road
Deerfield, IL 60015-0778
1-847-267-5300

Siemens Canada Limited
1200 Courtneypark Drive East
Mississauga, Ontario, Canada
L5T-1P2
Tel (905) 564-7333
Toll free (800) 264-0083
Fax (905) 795-4499

In case of emergency : Transportation: (800) 424-9300 (CHEMTREC)
Medical: (800) 228-5635 ext. 284 (Prosar)

2 . Hazards identification

Physical state : Liquid.

Odor : Odorless.

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : CAUTION!

May be harmful if swallowed.

May be harmful if swallowed. Do not ingest. Avoid breathing vapor or mist. Avoid contact with eyes, skin and clothing. Contains material that may cause target organ damage, based on animal data. Wash thoroughly after handling.

Not available.

Potential acute health effects

Inhalation : No known significant effects or critical hazards.

Ingestion : May be harmful if swallowed.

Skin : No known significant effects or critical hazards.

Eyes : No known significant effects or critical hazards.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.

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.

2 . Hazards identification

Fertility effects : No known significant effects or critical hazards.

Target organs : None established.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

See toxicological information (section 11)

3 . Composition/information on ingredients

United States

Name	CAS number	%
sodium chloride	7647-14-5	1
sodium azide	26628-22-8	0.1
streptomycin sulphate	3810-74-0	<0.1

There are no 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.

4 . First aid measures

Eye contact : Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if irritation occurs.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if irritation develops.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : If swallowed, do not induce vomiting unless directed to do so by medical personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

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

In case of fire, use water spray (fog), foam or dry chemical.

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:
phosphorus oxides
halogenated compounds
metal oxide/oxides

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).

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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 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	
sodium azide	**ACGIH TLV (United States, 2/2010). Notes: as hydrazoic acid vapor** C: 0.11 ppm, (as hydrazoic acid vapor) Form: as Hydrazoic acid vapor **ACGIH TLV (United States, 2/2010).** C: 0.29 mg/m³, (as Sodium azide) Form: as Sodium azide **NIOSH REL (United States, 6/2009). Absorbed through skin. Notes: NAN3** CEIL: 0.3 mg/m³, (NAN3) **NIOSH REL (United States, 6/2009). Absorbed through skin. Notes: as HN3** CEIL: 0.1 ppm, (as HN3) **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. Notes: as HN3** CEIL: 0.1 ppm, (as HN3) **OSHA PEL 1989 (United States, 3/1989). Absorbed through skin. Notes: as NaN3** CEIL: 0.3 mg/m³, (as NaN3)

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.

8 . Exposure controls/personal protection

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure 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 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 : Clear.

Odor : Odorless.

pH : 6 [Conc. (% w/w): 100%]

Melting/freezing point : May start to solidify at 0°C (32°F) based on data for: Deionized Water.

VOC : 0 % (w/w)

Solubility : Easily soluble in the following materials: cold water and hot water.

10 . Stability and reactivity

Stability : The product is stable.

Conditions to avoid : No specific data.

Materials to avoid : No specific data.

Not available.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Conditions of reactivity

Flammability : Non-flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat.

:

11 . Toxicological information

United States

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
sodium chloride	LD50 Intraperitoneal	Rat	2600 mg/kg	-
	LD50 Oral	Rat	3000 mg/kg	-
	LDLo Intraperitoneal	Rat	3.72 g/kg	-
	LDLo Subcutaneous	Rat - Male	3500 mg/kg	-
	TDLo Intraperitoneal	Rat	491 mg/kg	-
	TDLo Oral	Rat	1.43 mg/kg	-
sodium azide	LD50 Dermal	Rat	50 mg/kg	-
	LD50 Dermal	Rabbit	20 mg/kg	-
	LD50 Intratracheal	Rat	47.5 mg/kg	-
	LD50 Intratracheal	Rat	47500 ug/kg	-
	LD50 Oral	Rat	27 mg/kg	-
	LD50 Subcutaneous	Rat	45 mg/kg	-
	LD50 Subcutaneous	Rat	45100 ug/kg	-
	LDLo Intraperitoneal	Rat	30 mg/kg	-
	LDLo Intraperitoneal	Rat	3 mg/kg	-
streptomycin sulphate	LD50 Intraperitoneal	Rat	1219 mg/kg	-
	LD50 Oral	Rat	430 mg/kg	-
	LD50 Subcutaneous	Rat	600 mg/kg	-
	TDLo Intraspinal	Rat	22.72 ug/kg	-

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
sodium chloride	-	-	-	None.	-	-
sodium azide	A4	-	-	None.	-	-
streptomycin sulphate	-	-	-	None.	-	-

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

Canada

Acute toxicity

11 . Toxicological information

Not available.

Chronic toxicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
sodium chloride	-	-	-	None.	-	-
sodium azide	A4	-	-	None.	-	-
streptomycin sulphate	-	-	-	None.	-	-

Mutagenicity

Not available.

Teratogenicity

Not available.

Reproductive toxicity

Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

United States

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
sodium chloride	-	Acute EC50 2430000 ug/L Fresh water	Algae - Diatom - Navicula seminulum	96 hours
	-	Acute EC50 402600 to 469200 ug/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 2 g/L Fresh water	Daphnia - Water flea - Daphnia ambigua - Neonate	48 hours
	-	Acute LC50 1.59 g/L Fresh water	Crustaceans - Water flea - Ceriodaphnia dubia - Neonate	48 hours
	-	Acute LC50 1.47 to 1.57 g/L Fresh water	Daphnia - Water flea - Daphnia pulex	48 hours
	-	Acute LC50 1.1 to 1.4 g/L Fresh water	Daphnia - Water flea - Daphnia pulex - Neonate - <24 hours	48 hours
	-	Acute LC50 1.1 to 1.4 g/L Fresh water	Crustaceans - Water flea - Ceriodaphnia reticulata - Neonate - <24 hours	48 hours
	-	Acute LC50 2000 to 2500 mg/L Fresh water	Crustaceans - Water flea - Ceriodaphnia	48 hours

12 . Ecological information

			dubia	
	-	Acute LC50 1661 mg/L Fresh water	Daphnia - Water flea - Daphnia magna	48 hours
	-	Acute LC50 1042 mg/L Fresh water	Crustaceans - Water flea - Ceriodaphnia dubia - <24 hours	48 hours
	-	Acute LC50 5000 ppm Fresh water	Fish - Striped bass - Morone saxatilis - Fingerling - 1 months	96 hours
	-	Acute LC50 1000 ppm Fresh water	Fish - Striped bass - Morone saxatilis - Larvae - 1 weeks	96 hours
	-	Acute LC50 5000000 ug/L Fresh water	Fish - Striped bass - Morone saxatilis - Fingerling	96 hours
	-	Acute LC50 1960000 to 2330000 ug/L Fresh water	Crustaceans - Water flea - Ceriodaphnia dubia - <24 hours	48 hours
	-	Acute LC50 1294600 ug/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 5 to 9 cm - 1 to 9 g	96 hours
	-	Acute LC50 1000000 ug/L Fresh water	Fish - Striped bass - Morone saxatilis - Larvae	96 hours
	-	Chronic NOEC 0.314 g/L Fresh water	Daphnia - Water flea - Daphnia pulex	21 days
	-	Chronic NOEC 0.252 g/L Fresh water	Fish - Fathead minnow - Pimephales promelas - Egg	33 days
	-	Chronic NOEC 100 mg/L Fresh water	Fish - Eastern mosquitofish - Gambusia holbrooki - Adult	8 weeks
	-	Chronic NOEC 100 mg/L Fresh water	Fish - Eastern mosquitofish - Gambusia holbrooki - Fry - <1 weeks	4 weeks
	-	Chronic NOEC 643000 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - Egg	56 days
sodium azide	-	Acute EC50 6.4 to 8.9 mg/L Fresh water	Crustaceans - Water flea - Simocephalus serrulatus - Larvae - es7:k56s:7pt	48 hours

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	-	Acute EC50 4.2 to 6.2 mg/L Fresh water	Daphnia - Water flea - Daphnia pulex - Larvae - es7:k56s:7pt	48 hours
	-	Acute EC50 0.348 mg/L Fresh water	Algae - Green algae - Pseudokirchneriella subcapitata	96 hours
	-	Acute EC50 9200 ug/L Marine water	Algae - Giant kelp - Macrocystis pyrifera	96 hours
	-	Acute LC50 0.8 mg/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 1.4 g	96 hours
	-	Acute LC50 0.68 mg/L Fresh water	Fish - Bluegill - Lepomis macrochirus - 0.6 g	96 hours
	-	Acute LC50 9000 ug/L Fresh water	Crustaceans - Scud - Gammarus lacustris - 2 months	48 hours
	-	Acute LC50 3920 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 8.57 cm - 7.84 g	96 hours
	-	Acute LC50 2840 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 7.87 cm - 6.07 g	96 hours
	-	Acute LC50 2750 ug/L Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss - 7.32 cm - 4.76 g	96 hours
	-	Chronic NOEC 5600 ug/L Marine water	Algae - Giant kelp - Macrocystis pyrifera	96 hours
streptomycin sulphate	-	Acute EC50 487 mg/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	48 hours
	-	Acute EC50 0.133 mg/L Fresh water	Algae - Green algae - Pseudokirchneriella subcapitata - Exponential growth phase	3 days
	-	Acute EC50 650 ppm Fresh water	Daphnia - Water flea - Daphnia magna - Larvae -	48 hours

12 . Ecological information

		es7:k56s:7pt	
-	Acute EC50 363000 ug/L	Daphnia - Water flea - Daphnia magna	48 hours
-	Acute LC50 >180 ppm Fresh water	Fish - Rainbow trout,donaldson trout - Oncorhynchus mykiss	96 hours
-	Chronic NOEC 32 mg/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	21 days

Biodegradability

Not available.

Canada

Aquatic ecotoxicity

Not available.

Biodegradability

Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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.

Sodium azide may react with lead or copper plumbing to form highly explosive metal azides.

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

International transport regulations

DOT Classification

UN number	Not regulated.
Proper shipping name	-
Classes	-
PG*	-
Label	
Additional information	-

14 . Transport information

TDG Classification

UN number	Not available.
Proper shipping name	-
Classes	-
PG*	-
Label	
Additional information	-

Mexico Classification

UN number	Not regulated.
Proper shipping name	-
Classes	-
PG*	-
Label	
Additional information	-

IMDG Class

UN number	Not regulated.
Proper shipping name	-
Classes	-
PG*	-
Label	
Additional information	-

IATA-DGR Class

UN number	Not regulated.
Proper shipping name	-
Classes	-
PG*	-
Label	
Additional information	-

PG* : Packing group

14 . Transport information

15 . Regulatory information

United States

HCS Classification : Not regulated.May be harmful if swallowed.

U.S. Federal regulations :

TSCA 8(a) IUR: water
United States inventory (TSCA 8b): Not determined.

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: sodium chloride
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: sodium chloride: Immediate (acute) health hazard, Delayed (chronic) health hazard

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

Clean Water Act (CWA) 311: disodium hydrogenorthophosphate

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.

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
New Jersey Spill: None of the components are listed.
New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.
New York Acutely Hazardous Substances: None of the components are listed.
New York Toxic Chemical Release Reporting: None of the components are listed.
Pennsylvania RTK Hazardous Substances: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65

15 . Regulatory information

WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.
WARNING: This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
streptomycin sulphate	No.	Yes.	No.	No.
phenobarbital	Yes.	Yes.	Yes.	No.

United States inventory (TSCA 8b) : Not determined.

Use only for medical diagnostic (R&D) purposes

Canada

WHMIS (Canada) : Not controlled under WHMIS (Canada).

Canadian lists : **CEPA Toxic substances**: None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
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 : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

16 . Other information

EU regulations

Hazard symbol or symbols :

Harmful

Risk phrases : R22- Harmful if swallowed.

Safety phrases : S46- If swallowed, seek medical advice immediately and show this container or label.

International regulations

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): Not determined.
Japan inventory: All components are listed or exempted.
Korea inventory: All components are listed or exempted.
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

Date of printing : **4/13/2012.**

Date of issue : **4/13/2012.**

Version : **1.04**

Notice to reader

16 . Other information

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.