

Revision date: 04 June 2015

Version: 01

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name/designation:	Simulated Blood (Type A, Type B, Type AB, Type O)
Other means of identification:	Not applicable

1.2. Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses: For educational use only

1.3. Details of the supplier of the safety data sheet

Company:	Ward's Science	Boreal Science
	Division of VWR International, LLC	Division of VWR International Co.
	5100 West Henrietta Road	399 Vansickle Road
	P.O. Box 92912	St. Catherines, Ontario
	Rochester, NY 14692-9012	L2S 3T4 Canada
Telephone:	800.962.2660	800.387.9393

1.4. Emergency Telephone number

CHEMTREC	800.424.9300
CANUTEC	613.996.6666

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

For the full text of the H-Statement(s) and R-phrase(s) mentioned in this Section, see Section 16.

Hazard statements	Hazard classes and categories
H302	Acute toxicity (Category 4)
H335	Specific target organ toxicity, single exposure; Respiratory tract irritation (Category 3)

2.2. GHS Label elements, including precautionary statements

Pictograms:



Signal word: Warning

Hazard statements	
H302	Harmful if swallowed
H335	May cause respiratory irritation
Precautionary statements	
P261	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see ADDITIONAL INFORMATION on this label).
P330	Rinse mouth
P405	Store locked up
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to an approved waste disposal plant

2.3. WHMIS Classification:

D2A	Very Toxic Material Causing Other Toxic Effects
D2B	Toxic Material Causing Other Toxic Effects

2.4. Hazards not otherwise classified (HNOC) or not covered by GHS or WHMIS: None

SECTION 3: Composition/information on ingredients

3.1. Hazard components

Chemical name	Formula	Molecular weight	CAS#	Weight%
Nitrate Salt 1 (Type B, Type AB)	N/A	N/A	Proprietary	10-30
Nitrate Salt 2 (Type A, Type O)	N/A	N/A	Proprietary	7-13
Water	H ₂ O	18.02 g/mol	7732-18-5	57-83
Proprietary: HMRIC RN 8279: Date Exemption Granted: 29 Feb 2013				

SECTION 4: First aid measures

4.1. General information

In case of inhalation: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and

Product Identification: Simulated Blood (Type A, Type B, Type AB, Type O)

consult a physician.

In case of ingestion: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects, both acute and delayed: The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3. Indication of any immediate medical attention and special treatment needed: No data available

SECTION 5: Firefighting measures

5.1. Extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2. Special hazards arising from the substance or mixture: Carbon oxides

5.3. Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

5.4. Hazardous combustion products: No data available

5.5. Advice for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

5.6. Additional information: Use water spray to cool unopened containers

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures: Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. For personal protection see section 8.

6.2. Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4. Additional information: For disposal see section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling: Use proper personal protective equipment.

7.2. Conditions for safe storage, including any incompatibilities: Keep containers tightly closed in a cool, well-ventilated place.

7.3. Specific end use(s): No data available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

United States			
Chemical Name	Limit value type & Country of Origin	Exposure Limit value	Source
Nitrate salt 2	TWA (U.S.A.)	2 mg/m ³	OSHA PEL
	TWA (U.S.A.)	2 mg/m ³	NIOSH IDLH
Canada			
Chemical Name	Limit value type & Country of Origin	Exposure Limit value	Source
No data available to provide control parameters			

8.2. Exposure controls

Appropriate engineering controls: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protection equipment

Eye/face protection: Face shield and safety glasses Use equipment for eye protection Tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

- a) Appearance:
Physical state: Viscous liquid
Color: Blue, green, or yellow
- b) Odor: none detected
- c) Odor Threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: No data available
- f) Initial boiling point: No data available
boiling range: >100°C
- g) Flash point: No data available
- h) Evaporation rate (n-Butyl Acetate): No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability: No data available
explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: 1.0 g/mL
- m) Relative density: 1.0 g/mL (23°C)
- n) Solubilities: completely soluble in water
- o) Partition coefficient (n-Octanol/Water): No data available
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2. Other information: No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity: No data available

10.2. Chemical stability: No data available

10.3. Possibility of hazardous reactions: No data available

10.4. Conditions to avoid: Heat, flames and sparks.

10.5. Incompatible materials: Strong oxidizing agents

10.6. Hazardous decomposition products: No data available

SECTION 11: Toxicology

Product Identification: Simulated Blood (Type A, Type B, Type AB, Type O)

11.1. Information on toxicological effects

Acute toxicity

Oral LD₅₀: >3900 mg/kg (Rat)

Inhalation LC₅₀: No data available

Dermal LD₅₀: No data available

Other information on acute toxicity: No data available

Skin corrosion/irritation: No data available

Serious eye damage/eye irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: IARC: Group 2A: possible carcinogen
 NTP: No data available
 OSHA: No data available

Reproductive toxicity: Large doses have been shown to cause adverse reproductive effects.

Specific target organ toxicity-single exposure: No data available

Specific target organ toxicity-repeated exposure: No data available

Aspiration hazard: No data available

Additional information: No data available

SECTION 12: Ecological information

12.1. Ecotoxicity:

Toxicity to Fish	Toxicity to Daphnia Magna (Water Flea)
LC ₅₀ 96h: 1270-1470 mg/L (Pimephales promelas)	EC ₅₀ 48h: 2564 mg/L
LC ₅₀ 96h: 3040-4380 mg/L static (Lepomis macrochirus)	EC ₅₀ 96h: 630 mg/L
LC ₅₀ 96h: 13500 mg/L (Lepomis macrochirus)	
LC ₅₀ 96h: >6800 mg/L static (Pimephales promelas)	

12.2. Persistence and degradability: No data available

12.3. Bioaccumulative potential: No data available

12.4. Mobility in soil: No data available

12.5. Results of PBT and vPvB assessment: No data available

12.6. Other adverse effects: No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods: This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated packaging: Dispose of as unused product.

SECTION 14: Transport information

Land Transport DOT (U.S.)

Not dangerous goods

Sea Transport IMDG

Not dangerous goods

Transportation of Dangerous Goods (TDG)

Not dangerous goods

Air Transport IATA

Not dangerous goods

SECTION 15: Regulatory information

WHMIS Classification:

D2A	Very Toxic Material Causing Other Toxic Effects
D2B	Toxic Material Causing Other Toxic Effects

OSHA Hazards: Not a hazardous substance or mixture.

SARA 302 Extremely Hazardous Substances: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 (TRI reporting): SARA 313: The following materials are subject to SARA 313 requirements:

Nitrate Salt 2 Threshold Value: 1%
 Nitrate Salt 1 Threshold Value: 1%

SARA 311/312 Hazardous Chemicals: SARA 311/312: No chemicals in this material are subject to the reporting requirements of SARA Section 302

Massachusetts Right-To-Know Substance List: No chemicals reported

Pennsylvania Right-To-Know Hazardous substances: No chemicals reported

New Jersey Worker and Community Right-To-Know Components: No chemicals reported

California Proposition 65: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

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

SECTION 16: Other information

Full text of H-Statement(s) and P-phrase(s):

H302	Harmful if swallowed
H335	May cause respiratory irritation
P261	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
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P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see ADDITIONAL INFORMATION on this label).
P330	Rinse mouth
P405	Store locked up
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P501	Dispose of contents/container to an approved waste disposal plant

Canadian Carcinogenicity hazard class:

PHNOC hazard class: Not a hazardous substance or mixture

HHNOC hazard class: Not a hazardous substance or mixture

Biohazardous Infectious Materials hazard class: Not a hazardous substance or mixture

HMIS Rating:

Health: 1

Flammability: 0

Physical Hazard: 0

Reactivity: 0

NFPA Rating:

Health: 1

Flammability: 0

Reactivity: 0

Special Hazard: N/A

DISCLAIMER

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. VWR International, LLC and its affiliates shall not be held liable for any damage resulting from handling.