

Safety Data Sheet

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1. Product and company identification

Product name SFM4MegaVir™, 1000L

Catalogue Number SH30587.06

Product type Powder.

Original preparation date 1/11/2016

Date of issue/Date of revision 8/1/2019

Date of previous issue 6/22/2018

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

Not applicable.

Supplier / Manufacturer

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2. Hazards identification

GHS Classification

EYE IRRITATION - Category 2A

AQUATIC HAZARD (ACUTE) - Category 3

AQUATIC HAZARD (LONG-TERM) - Category 3

Percentage of the mixture consisting of ingredient(s) of unknown acute oral toxicity: 55.4%

Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 80.2%

Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 80.2%

Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 35.6%

GHS label elements

Hazard pictograms



Signal word

Warning

Hazard statements

Causes serious eye irritation.

Harmful to aquatic life with long lasting effects.

Precautionary statements

General

Prevention	Wear eye or face protection. Avoid release to the environment. Wash hands thoroughly after handling.
Response	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.
Storage	Not applicable.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Other hazards which do not result in classification	May form explosible dust-air mixture if dispersed.

3. Composition/information on ingredients

Substance/mixture	Mixture
Other means of identification	Not available.
<u>CAS number/other identifiers</u>	
CAS number	Not applicable.
ENCS number	Not available.
ISHL number	Not available.

Ingredient name	%	CAS number	ENCS	ISHL
potassium chloride	<3	7447-40-7	1-228	(1)-228
calcium chloride	<3	10043-52-4	1-176	Not available.
Sodium selenite	<0.0004	10102-18-8	1-507	Not available.

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.

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

4. First aid measures

Description of necessary first aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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	Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	Causes serious eye irritation.
Inhalation	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Skin contact	No known significant effects or critical hazards.
Ingestion	No known significant effects or critical hazards.

Short term exposure

Potential delayed effects	Not available.
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Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing

Skin contact No specific data.

Ingestion No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments No specific treatment.

Protection of first-aiders No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

5. Fire-fighting measures

Extinguishing media

Suitable Use dry chemical powder.

Not suitable Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.

Specific hazards arising from the chemical May form explosible dust-air mixture if dispersed. This material is harmful to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
sulfur oxides
halogenated compounds
metal oxide/oxides

Special precautions for fire-fighters 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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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, protective equipment and emergency procedures

For non-emergency personnel 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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). Water polluting material. May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

7. Handling and storage

Precautions for safe handling

Protective measures Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid release to the environment. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. 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. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

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. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage

Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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. See Section 10 for incompatible materials before handling or use.

8. Exposure controls/personal protectionControl parameters

Occupational exposure limits

Ingredient name

Sodium selenite

Exposure limits**Japan Society for Occupational Health (Japan, 5/2017).**OEL-M: 0.1 mg/m³, (measured as Se) 8 hours.**Appropriate engineering controls**

Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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.

Individual protection measures**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.

Eye/face protection

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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles. If operating conditions cause high dust concentrations to be produced, use dust goggles.

Skin protection**Hand protection**

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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

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.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

9. Physical and chemical propertiesAppearance

Physical state	Solid. [Powder.]
Color	Not available.
Odor	Not available.
Odor threshold	Not available.
pH	Not available.
Melting point	Not available.
Boiling point	Not available.
Flash point	Not available.
Fire point	Not available.
Evaporation rate	Not available.

Flammability (solid, gas)	Not available.
Lower and upper explosive (flammable) limits	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	Not available.
Solubility	Not available.
Solubility in water	Not available.
Partition coefficient: n-octanol/ water	Not available.
Auto-ignition temperature	Not available.
SADT	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Flow time (ISO 2431)	Not available.
Burning time	Not available.
Burning rate	Not available.

10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Prevent dust accumulation.
Incompatible materials	Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
potassium chloride	LD50 Oral	Rat - Male	2600 mg/kg	-
calcium chloride	LD50 Oral	Rat	1 g/kg	-
Sodium selenite	LD50 Oral	Rat	7 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Not available.					

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Not available.			

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Not available.			

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Reproductive toxicity

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Not available.						

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Not available.				

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
calcium chloride	Category 3	Not applicable.	Respiratory tract irritation
Sodium selenite	Category 1	Not determined	central nervous system (CNS), gastrointestinal tract, heart, kidneys, liver and respiratory system

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
calcium chloride	Category 2	Not determined	blood system
Sodium selenite	Category 1	Not determined	cardiovascular system, central nervous system (CNS), hair, kidneys, liver, nails, reproductive organs, skin and teeth

Aspiration hazard

Not available.

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Inhalation	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
Ingestion	No known significant effects or critical hazards.
Skin contact	No known significant effects or critical hazards.
Eye contact	Causes serious eye irritation.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	No specific data.
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposureShort term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

Not available.

General	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
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.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SFM4MegaVir™	6830.9	16884	N/A	168.8	N/A
potassium chloride	2600	N/A	N/A	N/A	N/A
calcium chloride	1000	N/A	N/A	N/A	N/A
Sodium selenite	7	N/A	N/A	N/A	N/A
Other information	Not available.				

12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
potassium chloride	Acute EC50 1337000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 9.24 g/L Fresh water	Algae - Desmodesmus subspicatus	72 hours
	Acute EC50 141.46 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 9.68 mg/l Fresh water	Crustaceans - Pseudosida ramosa - Neonate	48 hours
calcium chloride	Acute LC50 880 mg/l Fresh water	Fish - Pimephales promelas	96 hours
	Acute EC50 3130000 µg/l Fresh water	Algae - Navicula seminulum	96 hours
	Acute EC50 52000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 270 mg/l Marine water	Crustaceans - Americamysis bahia	48 hours
	Acute LC50 2110 mg/l Fresh water	Fish - Pimephales promelas	96 hours
Sodium selenite	Acute EC50 2900 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 80 µg/l Fresh water	Algae - Scenedesmus acutus var. acutus	3 days
	Acute LC50 350 µg/l Fresh water	Crustaceans - Ceriodaphnia affinis	48 hours
	Acute LC50 0.006 mg/l Fresh water	Daphnia - Daphnia pulicaria	48 hours
	Acute LC50 0.29 ppm Marine water	Fish - Zosterisessor ophiocephalus - Adult	96 hours
	Chronic NOEC 1 mg/l Marine water	Algae - Dunaliella salina - Exponential growth phase	4 days
	Chronic NOEC 0.24 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 3.936 ng/ml Fresh water	Fish - Oryzias latipes - Juvenile (Fledgling, Hatchling, Weanling)	210 days

Persistence/degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Sodium selenite	-	5.8	low

Mobility in soil

Soil/water partition coefficient (K _{oc})	Not available.
Mobility	Not available.
Hazardous to the ozone layer	Not applicable.
Other adverse effects	No known significant effects or critical hazards.

13. Disposal considerations

Disposal methods	The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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14. Transport information

	UN	IMDG	IATA
UN number	Not available.	Not available.	Not available.
UN proper shipping name	Not available.	Not available.	Not available.
Transport hazard class (es)	Not available.	Not available.	Not available.
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information**Special precautions for user**

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL and the IBC Code

Not available.

15. Regulatory information

Fire Service Law

Category	Substance name/Type	Danger category	Signal word	Designated quantity
Category I	Material that contains: nitrates	Not available.	Not available.	Not available.
Category IV	Material that contains: Class II petroleum (Water soluble)	III	Flammable - Keep Fire Away	2000 L
	Material that contains: Class III petroleum	III	Flammable - Keep Fire Away	2000 L
Fire Service Law - Obstructive materials				
	Not listed			

Maritime Safety Law

Notification Regulating Transportation of Dangerous Materials by Sea

None of the components are listed.

Container class

None of the components are listed.

ISHL

Use of specified chemical substances

None of the components are listed.

Label requirements

None of the components are listed.

Chemicals requiring notification

None of the components are listed.

Carcinogen

None of the components are listed.

Mutagen

None of the components are listed.

Corrosive liquid	Not listed
ISHL Appendix 1	Not available.
Lead regulation	Not listed
Prevention of Tetraalkyl Lead Poisoning	Not listed
Harmful Substances Subject to Obtaining Permission for Manufacturing	Not listed
Harmful Substances, Prohibited for Manufacturing	Not listed
Dangerous Substances	Not listed
Organic solvents poisoning prevention	Not available.

Chemical Substances Control Law (CSCL)

Nickel(II) sulfate	<0.000007	Priority assessment	148
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Poisonous and Deleterious Substances

Ingredient name	%	Status	Reference number
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Pollutant Release and Transfer Registers (PRTT)

None of the components are listed.

JSOH Carcinogen Not listed**Law Concerning Prevention of Pollution of the Ocean and Maritime Disaster** Not available.**Road law** Not available.**List of Specially Controlled Industrial Waste** Not listed**International regulations****Chemical Weapon Convention List Schedules I, II & III Chemicals**

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

International lists**National inventory**

Japan	Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Europe	Not determined.
United States	Not determined.
Canada inventory	Not determined.
China	Not determined.

16. Other information**History****Date of printing** 4/23/2020**Date of issue/Date of revision** 8/1/2019**Date of previous issue** 6/22/2018**Version** 0.01

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ATE = Acute Toxicity Estimate

BCF = Bioconcentration Factor

GHS = Globally Harmonized System of Classification and Labelling of Chemicals

IATA = International Air Transport Association

IBC = Intermediate Bulk Container

IMDG = International Maritime Dangerous Goods

LogPow = logarithm of the octanol/water partition coefficient

MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)

N/A = Not available

UN = United Nations

Procedure used to derive the classification

Classification	Justification
EYE IRRITATION - Category 2A	Calculation method
AQUATIC HAZARD (ACUTE) - Category 3	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 3	Calculation method
References	Not available.

 Indicates information that has changed from previously issued version.
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.
