


Section 1. Identification

Product identifier	: VIRKON AQUATIC
Material Number	: 57804716
Identified uses	: Disinfectant, Cleaning agents DIN: 02276356
Supplier/Manufacturer	: LANXESS Corporation Product Safety & Regulatory Affairs 111 RIDC Park West Drive Pittsburgh, PA 15275-1112
	For Information: US/Canada (800) LANXESS) International: +1 412 809 1000
In case of emergency	: CHEMTREC (800) 424 9300 International (703) 527 3887 Lanxess Emergency Phone: (866) 673 6350

Section 2. Hazard identification

HAZCOM Standard Status	: This material is considered hazardous by the Workplace Hazardous Materials Information System (WHMIS) 2015 requirements as defined in the Hazardous Product Act (HPA) and the Hazardous Products Regulations (HPR).
Physical state	: Solid.
Color	: Pink
Classification of the substance or mixture	: SKIN IRRITATION - Category 2 SERIOUS EYE DAMAGE - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
Hazard pictograms	: 
Signal word	: Danger
Hazard statements	: Causes serious eye damage. Causes skin irritation. May cause respiratory irritation.
Precautionary statements	
Prevention	: Wear protective gloves and eye/face protection. Use only in a well-ventilated area. Avoid breathing dust. Wash hands thoroughly after handling.
Response	: IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Storage	: Store locked up.
Disposal	: Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	: Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials and food and drink.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	% (w/w)	CAS number
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	25 - 50	70693-62-8
alkylarylsulphonate	10 - ≤25	68411-30-3
Butanedioic acid, 2-hydroxy-	≤10	6915-15-7
sulphamic acid	≤5	5329-14-6
Potassium hydrogen sulphate	≤5	7646-93-7
sodium toluenesulphonate	≤5	12068-03-0
dipotassium peroxodisulphate	≤5	7727-21-1
Sodium chloride	≤5	7647-14-5
Dipotassium disulphate	≤5	7790-62-7

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

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.

Section 4. First-aid measures

Description of first aid measures

- Eye contact** : Get medical attention immediately. 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. In case of contact with eyes, flush eyes with plenty of water for at least 30 minutes. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. If not breathing, if breathing is irregular or respiratory arrest occurs, provide artificial respiration, or oxygen by a trained professional, using a pocket type respirator.
- Skin contact** : In case of contact, flush skin with plenty of water for at least 30 minutes. Get medical attention immediately. Immediately remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. 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. 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.

Section 4. First-aid measures

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
- Inhalation** : May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Skin contact** : Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
Causes irritation with symptoms of reddening, itching, and swelling.
- Ingestion** : Corrosive with symptoms of coughing, burning, ulceration, and pain.

Potential chronic health effects

No known significant effects or critical hazards.

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Protection of first-aiders** : If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. No special measures required.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire. In case of fire, use water spray (fog), foam or dry chemical.
- Unsuitable extinguishing media** : None known.

Specific hazards arising from the chemical : Toxic and irritating gases/fumes may be given off during burning or thermal decomposition. Water runoff from fire fighting may be corrosive.

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

Special protective actions 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.

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.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

: 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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

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).

Methods and materials for containment and cleaning up

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

Section 7. Handling and storage

Precautions for safe handling

Protective measures

: Do not get in eyes or on skin or clothing. 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. Remove contaminated clothing and protective equipment before entering eating areas. Workers should wash hands and face before eating, drinking and smoking. Put on appropriate personal protection equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed.

Conditions for safe 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. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 8. Exposure controls/personal protection

Occupational exposure limits

Ingredient name	Exposure limits
dipotassium peroxodisulphate	ACGIH TLV (United States, 3/2016). TWA: 0.1 mg/m ³ , (as persulfate) 8 hours.

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.

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.

Personal protection

Section 8. Exposure controls/personal protection

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.
Respiratory protection	: 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.
Skin protection	: Wear suitable protective clothing and gloves. Suitable protective footwear.
Eye/face protection	: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead. If contact with product is possible, wear safety glasses with side shields.
Medical Surveillance	: Not available.

Section 9. Physical and chemical properties

Physical state	: Solid. [powder]
Color	: Pink
Odor	: Odorless.
Odor threshold	: Not available.
pH	: 2.35 to 2.65 [Conc. (% w/w): 1%]
Boiling point	: Not available.
Melting point	: Not available.
Flash point	: Not available.
Evaporation rate	: Not available.
Explosion limits	: Not available.
Vapor pressure	: Not available.
Density	: 1.07 g/cm ³
Specific gravity (Relative density)	: Not available.
Solubility in water	: 65 g/l
Partition coefficient: n-octanol/water	: Not available.
Vapor density	: Not available.
Viscosity	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: >50°C

Section 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	: 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. Hazardous decomposition products: sulfur oxides (SO ₂ , SO ₃ etc.), chlorine, hypochlorites, oxygen

Section 11. Toxicological information

Information on the likely routes of exposure : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation.
- Ingestion** : May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Corrosive with symptoms of reddening, tearing, swelling, burning and possible permanent damage.
- Inhalation** : May cause respiratory tract irritation with symptoms of coughing, sore throat and runny nose.
- Skin contact** : Corrosive with symptoms of reddening, itching, swelling, burning and possible permanent damage.
Causes irritation with symptoms of reddening, itching, and swelling.
- Ingestion** : Corrosive with symptoms of coughing, burning, ulceration, and pain.

Potential chronic health effects

Short 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.
- General** : 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.

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Test
VIRKON AQUATIC	LD50 Oral	Rat - Male, Female	4123 mg/kg	-	OECD 401 Acute Oral Toxicity
VIRKON AQUATIC	LD50 Dermal	Rat - Male, Female	>5000 mg/kg Extrapolation according to Regulation (EC) No. 440/2008	-	-
VIRKON AQUATIC	LC50 Inhalation Dusts and mists	Rat - Male, Female	>3.7 mg/l the particle size measurements of the product indicate that it is not respirable and therefore not	4 hours	-

Section 11. Toxicological information

			bioavailable by the inhalation route.		
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Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation	Reversibility
sulphamic acid	Eyes - Cornea opacity	Rabbit	2	-	4 hours	Fully reversible
	Eyes - Redness of the conjunctivae	Rabbit	1.5	-	7 days	Fully reversible
	Eyes - Edema of the conjunctivae	Rabbit	1.5	-	7 days	Fully reversible in more than 7 days

Conclusion/Summary

- Skin** : OECD 404: irritant (Rabbit)
- Eyes** : Pentapotassium bis(peroxymonosulphate) bis(sulphate):OECD405: Risk of serious damage to eyes. (Rabbit)
 alkylarylsulphonate:Causes serious eye damage. (Rabbit) OECD 405 Acute Eye Irritation/Corrosion
 Butanedioic acid, 2-hydroxy-:OECD 405: irritant (Rabbit)
 sulphamic acid:Moderate irritant , OECD 405 Acute Eye Irritation/Corrosion
 sodium toluenesulphonate:irritant (Rabbit)
 dipotassium peroxodisulphate:Irritating to eyes.
 Sodium chloride:Moderate irritant , Rabbit
 Dipotassium disulphate:Risk of serious damage to eyes.

Sensitization

Product/ingredient name	Route of exposure	Species	Result
VIRKON AQUATIC	skin Respiratory	Guinea pig Mammal - species unspecified	Not sensitizing Not sensitizing

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Pentapotassium bis (peroxymonosulphate) bis (sulphate)	Sub-acute NOEL Oral	Rat - Male, Female	>1000 mg/kg bw/day	28 days
	Sub-chronic LOAEL Oral	Rat - Male, Female	600 mg/kg bw/day	90 days; 7 days per week daily
alkylarylsulphonate	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg	12 weeks; daily
sodium toluenesulphonate	Sub-chronic NOAEL Oral	Rat	114 mg/kg	91 days

- Conclusion/Summary** : Butanedioic acid, 2-hydroxy-:No known significant effects or critical hazards.

Mutagenicity

Section 11. Toxicological information

Product/ingredient name	Test	Experiment	Result
Pentapotassium bis (peroxymonosulphate) bis (sulphate)	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic Metabolic activation: +/-	Positive
	OECD 473 <i>In vitro</i> Mammalian Chromosomal Aberration Test	Experiment: In vitro Subject: Mammalian-Human Cell: Somatic Metabolic activation: +/-	Positive
	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vivo Subject: Mammalian-Animal	Negative
	Ames test	Experiment: In vitro Subject: Bacteria Metabolic activation: +/-	Negative
alkylarylsulphonate	Cytogenetic assay	Experiment: In vivo Subject: Mammalian-Animal	Negative
sulphamic acid	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: With and Without	Negative
	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria Metabolic activation: With and Without	Negative
	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: With and Without	Negative
	OECD 476 <i>In vitro</i> Mammalian Cell Gene Mutation Test	Experiment: In vitro Subject: Mammalian-Animal Metabolic activation: With and Without	Negative
	OECD 487 <i>In vitro</i> Micronucleus Test	Experiment: In vitro Subject: Mammalian-Human Metabolic activation: with and without	Negative

Conclusion/Summary : dipotassium peroxodisulphate:Not mutagenic in a standard battery of genetic toxicological tests.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
alkylarylsulphonate	Negative - Oral -	Rat	-	2 years; daily

Product/ingredient name	CAS #	IARC	NTP	OSHA
Pentapotassium bis (peroxymonosulphate) bis(sulphate)	70693-62-8	Not classified.	Not classified.	Not classified.
alkylarylsulphonate	68411-30-3	Not classified.	Not classified.	Not classified.
Butanedioic acid, 2-hydroxy-sulphamic acid	6915-15-7	Not classified.	Not classified.	Not classified.
Potassium hydrogen sulphate	5329-14-6	Not classified.	Not classified.	Not classified.
sodium toluenesulphonate	7646-93-7	Not classified.	Not classified.	Not classified.
dipotassium peroxodisulphate	12068-03-0	Not classified.	Not classified.	Not classified.
Sodium chloride	7727-21-1	Not classified.	Not classified.	Not classified.
Dipotassium disulphate	7647-14-5	Not classified.	Not classified.	Not classified.
	7790-62-7	Not classified.	Not classified.	Not classified.

Section 11. Toxicological information

Reproductive toxicity

Conclusion/Summary : Butanedioic acid, 2-hydroxy-: No known significant effects or critical hazards.

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
alkylarylsulphonate	Positive - Oral	Rat - Female	600 mg/kg NOAEL	15 days Gestation; daily

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
VIRKON AQUATIC	Category 3	Not applicable.	Respiratory tract irritation
Pentapotassium bis(peroxymonosulphate) bis(sulphate)	Category 3	Not applicable.	Respiratory tract irritation
alkylarylsulphonate	Category 3	Not applicable.	Respiratory tract irritation
Butanedioic acid, 2-hydroxy-	Category 3	Not applicable.	Respiratory tract irritation
sulphamic acid	Category 3	Not applicable.	Respiratory tract irritation
Potassium hydrogen sulphate	Category 3	Not applicable.	Respiratory tract irritation
sodium toluenesulphonate	Category 3	Not applicable.	Respiratory tract irritation
dipotassium peroxodisulphate	Category 3	Not applicable.	Respiratory tract irritation
Sodium chloride	Category 3	Not applicable.	Respiratory tract irritation

Acute toxicity estimates

Route	ATE value (Acute Toxicity Estimates)
Not available.	

Section 12. Ecological information

Toxicity

Product/ingredient name	Test	Result	Species	Exposure
VIRKON AQUATIC	OECD 201 Alga, Growth Inhibition Test	Acute LC50 20 mg/l Fresh water	Algae - Scenedesmus subspicatus	72 hours
	OECD 202 <i>Daphnia</i> sp. Acute Immobilization Test	Acute LC50 6.5 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	EU Method C.1 (Acute Toxicity for Fish)	Acute LC50 24.6 mg/l Fresh water	Fish - Salmo salar	96 hours
	OECD 201 Alga, Growth Inhibition Test	Chronic NOEC 6.25 mg/l Fresh water	Algae - Scenedesmus subspicatus	72 hours

Persistence and degradability

Section 12. Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
alkylarylsulphonate	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	83 % - Readily - 28 days	34.3 mg/l	Activated sludge
Butanedioic acid, 2-hydroxy-	OECD 301B Ready Biodegradability - CO ₂ Evolution Test	67.5 % - Readily - 28 days	-	-
sodium toluenesulphonate	OECD 301C Ready Biodegradability - Modified MITI Test (I)	0 to 2 % - Not readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
alkylarylsulphonate	-	-	Readily
Butanedioic acid, 2-hydroxy-	-	-	Readily
sodium toluenesulphonate	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Pentapotassium bis (peroxymonosulphate) bis (sulphate)	<0.3	-	low
alkylarylsulphonate	1.4	-	low
Butanedioic acid, 2-hydroxy-	-1.26	-	low
Sodium chloride	-3	-	low

Mobility in soil

Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. 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. Waste disposal should be in accordance with existing federal state, provincial and or local environmental controls laws.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	-	-	-	-		Not regulated.
IMDG Class	-	-	-	-		Not regulated.
IATA-DGR Class	-	-	-	-		Not regulated.

PG* : Packing group

Section 15. Regulatory information

CEPA Status : All components of this product are on the Canadian DSL list.

U.S. Toxic Substances Control Act : Not available.

Hazardous Material Information System :

Health	3
Flammability	0
Physical hazards	0

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme *=Chronic

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



0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

LANXESS' method of hazard communication is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by LANXESS as a customer service.

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Section 16. Other information

Date of issue : 08-11-2017

Date of previous issue : No previous validation

Version : 1

Prepared by : Product Safety and Regulatory Affairs

Indicates information that has changed from previously issued version.

[Notice to reader](#)

Section 16. Other information

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