



SAFETY DATA SHEET

Safety Data Sheet according to Directive 2001/58/EC

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product name: KATHON™ FP 1.5 BIOCIDES

Product Use Description: Biocidal product

Supplier: Rohm and Haas Company
Herald Way
Coventry CV3 2RQ United Kingdom
Telephone: +44 (0) 24-7665-4400

Emergency telephone number
United Kingdom +44 (0)191-4898181

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product is a preparation.

Component	CAS-No.	EINECS-No.	Concentration	Classification
Magnesium nitrate	10377-60-3	233-826-7	1,0 - < 2,5 %	O, Xi R 8, R36/38
Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	55965-84-9		1,0 - < 2,5 %	T, N R23/24/25, R34, R43, R50/53

The full text of each R phrase is listed in section 16.

3. HAZARDS IDENTIFICATION

Irritating to skin.
Risk of serious damage to eyes.
May cause sensitization by skin contact.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

4. FIRST AID MEASURES

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. If symptoms persist, call a physician.

Skin contact: IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash off with soap and water. Immediate medical attention is required. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Discard contaminated shoes, belts, and other articles made of leather.

Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Ingestion: Drink 1 or 2 glasses of water. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Use extinguishing media appropriate for surrounding fire.

Specific hazards during fire fighting: Combustion generates toxic fumes of the following: hydrogen chloride nitrogen oxides (NOx) sulfur oxides

Special protective equipment for fire-fighters: Wear self-contained breathing apparatus and protective suit.

Further information: Cool containers / tanks with water spray.
Minimize exposure.
Do not breathe fumes.
Contain run-off.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear a NIOSH approved (or equivalent) respirator (with organic vapor/acid gas cartridge and a dust/mist filter) during spill clean-ups and deactivation of this material.
If exposed to material during clean-up operations, IMMEDIATELY remove all contaminated clothing and wash exposed skin areas with soap and water. See SECTION 4, First Aid Measures, for further information.

Methods for cleaning up

WARNING: KEEP SPILLS AND CLEAN-UP RESIDUALS OUT OF MUNICIPAL SEWERS AND OPEN BODIES OF WATER. Adsorb the spill with spill pillows or inert solids such as clay or vermiculite, and transfer contaminated materials to suitable containers for disposal. Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Let stand for 30 minutes. Flush the spill area with copious amounts of water to chemical sewer (if in accordance with local procedures, permits and regulations). DO NOT add deactivation solution to the waste pail to deactivate the adsorbed material. See Section 13, "Disposal Considerations", for information regarding the disposal of contained materials.

7. HANDLING AND STORAGE

Handling

This material is a severe irritant. For personal protection see section 8. Do not handle material near food, feed or drinking water. Shower or bathe at the end of working.
Further information on storage conditions: CONTAINERS MAY BE HAZARDOUS WHEN EMPTY. Since emptied containers retain product residue follow all MSDS and label warnings even after

container is emptied. Expiration date based only on retention of >95% actives during storage at 20°C-25°C (68°F-77°F).

Storage

Storage conditions: Keep in a well-ventilated place. The product as supplied may evolve gas (largely carbon dioxide) slowly. To prevent the buildup of pressure the product is packaged in specially vented containers, where necessary. Keep this product in the original container when not in use. Container must be stored and transported in an upright position to prevent spilling the contents through the vent, where fitted. Do not store this material in containers made of the following: steel Do not store this material near food, feed or drinking water.

Storage temperature: ≥ 1 °C

Storage temperature: ≤ 55 °C

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Exposure limits are listed below, if they exist.

Component	Regulation	Type of listing	Value
Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)	Rohm and Haas	TWA	0,076 mg/m ³ , CMI
	Rohm and Haas	STEL	0,23 mg/m ³ , CMI
	Rohm and Haas	TWA	1,5 mg/m ³ , MI
	Rohm and Haas	STEL	4,5 mg/m ³ , MI

Exposure controls

Eye protection: Use chemical splash goggles and face shield (ANSI Z87.1 or approved equivalent). Eye protection worn must be compatible with respiratory protection system employed.

Hand protection: Chemical-resistant gloves should be worn whenever this material is handled. The glove(s) listed below may provide protection against permeation. (Gloves of other chemically resistant materials may not provide adequate protection): butyl-rubber Nitrile rubber Gloves should be removed and replaced immediately if there is any indication of degradation or chemical breakthrough. Rinse and remove gloves immediately after use. Wash hands with soap and water. NOTE: Material is a possible skin sensitizer.

Skin and body protection: Wear as appropriate: Chemical resistant apron complete suit protecting against chemicals

Respiratory protection: Typical use of this material does not result in workplace exposures that exceed the exposure limits listed in the Exposure Limit Information Section. For those special workplace conditions where the listed exposure limits are exceeded, a respiratory protection program meeting OSHA 1910.134 and ANSI Z88.2 requirements must be followed. For concentrations up to 10 times the exposure limit, wear a properly fitted NIOSH approved (or equivalent) half-mask or full facepiece air purifying respirator equipped with organic vapor cartridges and N95 filters. If oil mist is present, use R95 or P95 filters. For those unlikely situations where exposure may greatly exceed the listed exposure limits (i.e. greater than 10-fold), or in any emergency situation, wear a properly fitted NIOSH approved (or equivalent) self-contained breathing apparatus in the pressure demand mode or a full facepiece airline respirator in the pressure demand mode with emergency escape provision. See SECTION 6, Accidental Release Measures, for respirator and protective clothing requirements for spill clean-up and decontamination of this material.

Protective measures: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

Engineering measures: Use local exhaust ventilation with a minimum capture velocity of 150 ft/min. (0.75 m/sec.) at the point of dust or mist evolution. Refer to the current edition of "Industrial Ventilation: A Manual of Recommended Practice" published by the American Conference of Governmental Industrial Hygienists for information on the design, installation, use, and maintenance of exhaust systems.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Colour	colorless to pale yellow clear
Odour	aromatic
pH	4,4
Boiling point/range	229 °C Solvent
Flash point	138 °C PENSKEY MARTENS CLOSED CUP
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	0,06 mmHg Solvent
Relative vapour density	0,6
Water solubility	completely soluble
Relative density	1,04 at 25,00 °C
Viscosity, dynamic	97,800 mPa.s at 25,00 °C
Evaporation rate	<1,00 Water
Percent volatility	< 97 %

NOTE: The physical data presented above are typical values and should not be construed as a specification.

10. STABILITY AND REACTIVITY

Hazardous reactions	Stable under recommended storage conditions.
Materials to avoid	Avoid contact with the following: Oxidizing agents Amines Reducing agents mercaptans
Hazardous decomposition products	nitrogen oxides (NO _x), Sulphur oxides, hydrogen chloride,
polymerization	Product will not undergo polymerization.

11. TOXICOLOGICAL INFORMATION

Acute oral toxicity	LD50 rat female 3.723 mg/kg
	LD50 rat male 3.600 mg/kg
Acute inhalation toxicity	LC50 rat 4 h 0,33 mg/l Active ingredient
Acute dermal toxicity	LD50 rabbit female > 3.600 mg/kg
	LD50 rabbit male 3.500 mg/kg
Skin irritation	rabbit Irritant
Eye irritation	rabbit Severe eye irritation
Sensitization	guinea pig Causes sensitization.

Carcinogenicity:

Carcinogenicity: Non-carcinogenic in both a mouse dermal and rat oral carcinogenicity study. Active ingredient

Toxicity to reproduction

This product is not a reproductive hazard. Active ingredient

Teratogenicity

Did not show teratogenic effects in animal experiments. Active ingredient

Mutagenicity

Non-mutagenic Active ingredient

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)**Biodegradability**

Biodegradation (aquatic metabolism): CAS # 26172-55-4 t 1/2 anerobic = 4.8 hr, CAS # 26172-55-4 t 1/2 aerobic = 17.3 hr, CAS # 2682-20-4 t 1/2 aerobic = 9.1 hr

Physico-chemical removability

Activated Sludge Respiration Inhibition EC50: 4.5 mg/L ai

Ecotoxicity effects**Toxicity to fish**

LC50 Oncorhynchus mykiss (rainbow trout) 96 h
0,19 mg/l
Active ingredient

Toxicity to fish

LC50 Bluegill sunfish 96 h
0,28 mg/l
Active ingredient

Toxicity to algae

EC50 Marine algae (Skeletonema costatum)
0,003 mg/l
Active ingredient

Toxicity to algae	EC50 Algae (<i>Selenastrum capricornutum</i>) 0,018 mg/l Active ingredient
Toxicity to aquatic invertebrates	EC50 <i>Daphnia magna</i> 48 h 0,16 mg/l Active ingredient

13. DISPOSAL CONSIDERATIONS

Disposal

Incinerate liquid and contaminated solids in accordance with local, state, and federal regulations.

European Waste Catalogue (94/3 EC) The definitive assignment of this material to the appropriate EWC group and thus its proper EWC code will depend on the use that is made of this material. If the material as delivered must be disposed of, or you require assistance with assigning the proper EWC code, please contact your local Rohm and Haas office

14. TRANSPORT INFORMATION

Classification for ROAD and Rail transport (ADR/RID):

Not regulated (Not dangerous for transport)

Classification for SEA transport (IMO-IMDG):

Not regulated (Not dangerous for transport)

Classification for AIR transport (IATA/ICAO):

Not regulated (Not dangerous for transport)

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations

15. REGULATORY INFORMATION

Label

Classification and labeling have been performed according to EU directives 67/548/EEC and 99/45/EC including amendments.

Hazard symbol and Indication of danger

|| Xi Irritant
Contains: Mixture of: 5-chloro-2-methyl-2H-isothiazol-3-one and 2-methyl-2H-isothiazol-3-one (3:1)

R-phrases(s)

|| R38 Irritating to skin.
|| R41 Risk of serious damage to eyes.
|| R43 May cause sensitization by skin contact.

R52/53 Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

S-phrase(s)

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
 S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
 S60 This material and its container must be disposed of as hazardous waste.

EU. EINECS (EINECS) This product satisfies all the requirements of the European Inventory of Existing Chemical Substances (EINECS).

US. Toxic Substances Control Act (TSCA) This product is subject to regulation under the US Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and is therefore exempt from U.S. Toxic Substances Control Act (TSCA) Inventory listing requirements.

16. OTHER INFORMATION

Full text of the R-phrases given in Section 2

R 8 Contact with combustible material may cause fire.
 R23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
 R34 Causes burns.
 R36/38 Irritating to eyes and skin.
 R43 May cause sensitization by skin contact.
 R50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Emergency telephone number

European Region	+33 (0) 140025045
United States of America	+1-215-592-3000

Legend

ACGIH	American Conference of Governmental Industrial Hygienists
BAc	Butyl acetate
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
STEL	Short Term Exposure Limit (STEL):
TLV	Threshold Limit Value
TWA	Time Weighted Average (TWA):
	Bar denotes a revision from prior MSDS.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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PRODUCT DATA

KATHON™ FP1.5 FUEL BIOCIDES



DESCRIPTION KATHON® FP 1.5 microbiocide from Rohm and Haas is a patented, high performance antimicrobial agent, developed specially to combat problems of microbial contamination and spoilage in hydrocarbon fuels.

KATHON™ FP 1.5 is a broad spectrum preservative and disinfectant for the treatment of diesel fuels, kerosenes, heating oils and aviation fuels, the active components being isothiazolone compounds.

As water finds its way into fuel storage tanks, often observed as fuel haziness, microorganisms breed, forming slime and emulsion that leads to filter blockage and corrosion of metal tanks. Once transported, the contaminated fuel contains the accumulated bacteria and fungi which cause the blockage of downstream filters, pumps and injectors.

Treatment with KATHON™ FP 1.5 will kill off bacterial and fungal contamination and assist the breakdown of slimes and coagulated biological sludges. This will help to prevent filters from blinding, and allow clean fuel to flow normally. An extra advantage is the elimination of the often deep emulsion layer at the fuel/water interface which will facilitate water removal by draining or by the fuel line separator. It is this emulsion that is often the critical problem when it enters the fuel line after fuel contents of a tank are disturbed or shaken.

Fuel treated with KATHON™ FP 1.5 will remain protected from contamination over extended periods of time. It will also resist contamination if re-inoculated from other sources. In studies conducted over an 8 week period, contaminated fuels were treated with fuel biocides. The fuel treated with KATHON™ FP 1.5 remained free from contamination for the duration of the trial. None of the competitive products evaluated could match this performance.

KATHON™ FP 1.5 has outstanding performance in a variety of applications and has wide ranging approvals and endorsements for use in aviation, marine, automotive, home heating and military fuels. Full details of approvals for KATHON™ FP 1.5 are contained in a separate bulletin.

AVIATION APPLICATION A dose rate of 100ppm with a minimum retention time of 12 hours should be used in JET A1 fuel and all other aviation applications.

OTHER APPLICATION KATHON™ FP 1.5 is normally dosed at the rate of approximately 300 ppm, which corresponds to 0.3 kg per 1000 litres of fuel volume. If Kathon FP1.5 is being dosed as a precautionary measure, when there is no evidence of microbial contamination, a lower dosage rate of approximately 150 ppm (0.15 kg per 1000 litres) will be appropriate. In cases of severe contamination, however, a dosage rate of up to 1000 ppm (1 kg per 1000 litres) should be used. The higher dosage rates in these circumstances will also help to improve filter fuel flow in the short term. At 300 ppm a minimum retention time of 12 hours should be maintained but this may be reduced at the higher dosage rates. In general, the higher the concentration of biocide, the shorter the contact time required for a more complete kill but in all cases 24 hours retention is sufficient.

Where possible, water and sludge should be removed from fuel tanks before dosing Kathon FP1.5 and also after the retention period. If this is not feasible, filters should be checked more frequently for a short period, due to microbial slimes being killed off and dislodged.

Ideally, KATHON™ FP 1.5 should be dosed shortly before the tank is re-filled with fresh fuel. The resulting agitation of the fuel then ensures uniform mixing of the biocide throughout the tank. Kathon FP1.5 can be added directly to the tank in such cases. If dosing cannot be carried out shortly before a fuel delivery, it is preferable to dissolve the KATHON™ FP 1.5 in a small quantity of fuel, then add the solution to the tank. **Tanks must be at least 10% full before dosing** and preferably fill the tank after dosing.

Depending upon site circumstances, it may sometimes be necessary to neutralise residual biocide before discharging treated water bottoms to the foul drain. Please see main brochure.

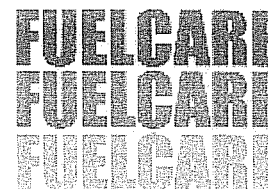
AVAILABILITY

Kathon FP1.5 is supplied in 5 kg and 20 kg polythene containers,
The full brochure is available at our website www.fuelcare.com/kathonfp15brochure.pdf

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HANDLING DATA

KATHON™ FP1.5 FUEL BIOCIDES



COMPOSITION

A solution of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one

USE PROPERTIES

A broad spectrum fuel biocide.

Appearance	Clear colourless to pale yellow liquid
S.G.	1.04 at 25.00°C
pH (10 % solution)	4.4
Hazardous Components	Active components are irritants
Volatile Components	None
Flammability	Not flammable
Solubility	Soluble in water in all proportions
Potential Hazards	May be harmful if ingested
Shelf Life	Retention of > 95% actives in 12 months
Storage	Store in a warm, dry area protected from frost or excessive heat

HANDLING

Irritating to skin
Risk of serious damage to eyes
May cause sensitization by skin contact
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment

PROTECTION

Wear goggles, PVC or rubber gloves, and protective clothing

SPILLAGES

Absorb in inert material and dispose of in accordance with local regulations

FIRST AID

Inhalation: Move to fresh air. Give artificial respiration if breathing has stopped. If symptoms persist, call a physician.
Skin contact: IMMEDIATELY get under a safety shower. Remove contaminated clothing. Wash off with soap and water. Immediate medical attention is required. Wash contaminated clothing before re-use. Do not take clothing home to be laundered. Discard contaminated shoes, belts, and other articles made of leather.
Eye contact: Rinse immediately with plenty of water for at least 15 minutes. Immediate medical attention is required. Ingestion: Drink 1 or 2 glasses of water. IMMEDIATELY see a physician. Never give anything by mouth to an unconscious person

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Classification for SEA transport (IMO-IMDG): Not regulated (Not dangerous for transport)
Classification for AIR transport (IATA/ICAO): Not regulated (Not dangerous for transport)

For full information please see Material and Safety Data Sheet www.fuelcare.com/kathonfp15msds.pdf

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