



# Aquamax KF Reagent "A"

## for coulometric KF titrators

### 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Chemical Name	Aquamax KF Reagent "A"
Use	Laboratory and industrial reagent.
Manufacturer	ROMIL Ltd The Source, Convent Drive, Waterbeach, Cambridge, CB25 9QT United Kingdom
Telephone	+44 (0) 1223 863 873
Fax	+44 (0) 1223 862 700
Email	pure.chemistry@romil.com
Emergency Telephone	+44 (0) 1223 863 873 (office hours only)
Product Code(s)	620006

### 2 HAZARDS IDENTIFICATION

GHS Classification	Flammable liquid, Category 2 Acute toxicity, Oral, Category 3 Acute toxicity, Dermal, Category 3 Acute toxicity, Inhalation, Category 3 Skin corrosion, Category 1B Carcinogenicity, Category 2 Reproductive toxicity, Category 1B Specific target organ toxicity – single exposure, Category 1 Specific target organ toxicity – repeated exposure, Category 1
EC Classification	F: R11 Highly flammable. T: R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. C: R34 Causes burns. T+: R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. Xn: R40: Limited evidence of a carcinogenic effect. T: R61 May cause harm to the unborn child.
GHS Labelling	
Hazard Pictogram(s)	
Signal Word	Danger
Hazard Statement(s)	H225 Highly flammable liquid and vapour. H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled. H314 Causes severe skin burns and eye damage. H351 Suspected of causing cancer. H360D May damage the unborn child. H370 Causes damage to organs. H372 Causes damage to organs through prolonged or repeated exposure.
Precautionary Statement(s)	P201 Obtain special instructions before use. P210 Keep away from heat/ sparks/ open flames/ hot surfaces - No smoking. P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P305+P351+P338 IF exposed or concerned: Get medical advice/ attention. P308+P313



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EC Labelling

Hazard Symbols



Risk Phrases

R11	Highly flammable.
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
R34	Causes burns.
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
R40	Limited evidence of a carcinogenic effect.
R61	May cause harm to the unborn child.

Safety Phrases

S16	Keep away from sources of ignition - No smoking.
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).
S53	Avoid exposure - obtain special instructions before use.

Other Hazards

None known.

### 3 COMPOSITION/INFORMATION ON INGREDIENTS

Chloroform CAS 67-66-3 EC 200-663-8	>20% & <40% GHS: Carc. 2; Repr. Tox. 2; Acute Tox. I. 3; Acute Tox. O. 4; STOT RE 1; Eye Irrit. 2; Skin Irrit. 2; H351, H361d, H331, H302, H372, H319, H315 EC: Xn: R22; R48/20/22; Xi: R38; Carc. Cat. 3: R40
Methanol CAS 67-56-1 EC 200-659-6	>20% & <40% GHS: Flam. Liq. 2; STOT SE 1; Acute Tox I. 3; Acute Tox D. 3; Acute Tox O. 3; H225, H301+H311+H331, H370 EC: F: R11; T: R23/24/25; T+: R39/23/24/25
Xylene mixed isomers CAS 1330-20-7 EC 215-535-7 (comprises 3 isomers and ethylbenzene)	>20% & <30% GHS: Flam Liq. 3; Acute Tox. D 4; Acute Tox I. 4; Skin Irrit. 2; H226, H312+H332, H315 EC: R10; Xn: R20/21; Xi: R38
Imidazole CAS 288-32-4 EC 206-019-2	>10% & <20% GHS: Acute Tox O. 4; Skin Corr. 1C; Repr. Tox. 1B; H302, H314, H360D EC: Xn: R22; C: R34; Xn: Repr. Cat 3 R63
Sulphur Dioxide CAS 7446-09-5 EC 231-195-2	>10% & <20% GHS: Press. Gas; Acute Tox. I. 3; Skin Corr. 1B; H314, H331 EC: T: R23; C: R34
Iodine CAS 7553-56-2 EC 231-442-4	>1% & <2% GHS: Acute Tox. D. 4; Acute Tox. I. 4; Acute Aq. Tox. 1; H312+H332, H400 EC: Xn: R20/21; N: R50

Other ingredients at concentrations not classified as hazardous.

See section 16 for the full text of classification codes.

### 4 FIRST-AID MEASURES

Skin Contact	Flood the splashed surface with large quantities of running water. Remove contaminated clothing. Obtain medical attention.
Eye Contact	Irrigate thoroughly with water or saline solution for at least 15 minutes. Obtain medical attention. Remove contact lenses if possible.
Ingestion	Wash mouth out with large quantities of water. If the chemical has been swallowed, give plenty of water to drink. Obtain medical attention. Do not induce vomiting.
Inhalation	Remove victim immediately to fresh air, keep warm and at rest (in the recovery position). If breathing is weak, irregular or has stopped, commence artificial respiration. Oxygen may be beneficial. Obtain medical attention.

**> In all cases of exposure, refer to medical attention.**



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### 5 FIRE-FIGHTING MEASURES

Special Exposure Hazard	Material is highly flammable. Vapour/air mixtures are explosive. If involved in a fire toxic fumes will be evolved (carbon oxides, nitrogen oxides, sulphur oxides, hydrogen chloride, hydrogen cyanide).
Extinguishing Media	Extinguish with carbon dioxide, dry chemical, foam or waterspray.

### 6 ACCIDENTAL RELEASE MEASURES

Personal Protection	Wear suitable protective clothing, gloves and eye/face protection. Avoid breathing vapours.
Leaks and Spills	Shut off ignition sources. Instruct others to keep at a safe distance. Contain or absorb leaking liquid with sand or earth. Transfer to a closable salvage container and arrange for disposal by the appropriate method or retain for recovery.
Clean-Up Procedures	Wash the spillage site with large amounts of water. Ventilate area to evaporate solvent and dispel vapour. Do not empty into drains.

### 7 HANDLING AND STORAGE

Handling Precaution	Wear suitable protective clothing, gloves and eye/face protection. Use only under a fume extraction hood or in a fume cupboard. Avoid inhalation and contact with skin and eyes.
Storage Precautions	Store in a cool, dry, well ventilated area well away from heat or other sources of ignition. Keep containers tightly closed and away from strong oxidising agents.

### 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protection	Wear suitable protective clothing, gloves and eye/face protection. Avoid breathing vapours.
Exposure Controls	Chloroform: LTEL (8hr TWA) 2 ppm; 9.9 mg/m <sup>3</sup> (EH40/2005 Ed 2) STEL (15 min.) - - - ppm; - - - mg/m <sup>3</sup> (EH40/2005 Ed 2) Methanol: LTEL (8hr TWA) 200 ppm; 266 mg/m <sup>3</sup> (EH40/2005 Ed 2) STEL (15 min.) 250 ppm; 333 mg/m <sup>3</sup> (EH40/2005 Ed 2) Xylene mixed isomers: LTEL (8hr TWA) 50 ppm; 220 mg/m <sup>3</sup> (EH40/2005 Ed 2) STEL (15 min.) 100 ppm; 441 mg/m <sup>3</sup> (EH40/2005 Ed 2)

### 9 PHYSICAL AND CHEMICAL PROPERTIES

Molecular Formula	n/a		
Appearance and Odour	Slight yellow liquid with striking odour.		
Solubility	Immiscible with water. Miscible with ethanol, benzene, acetone, most organic solvents and diethyl ether.		
Boiling Point	58 °C	Melting Point	n/a
Flash Point	11 °C	Explosion Limits	n/a
Vapour Pressure	n/a	Density	1.08 g/ml at 20°C
		Autoignition Temp	n/a

### 10 STABILITY AND REACTIVITY

Chemical Stability	Stable at normal ambient temperatures. Hygroscopic.
Conditions to Avoid	Reacts violently/explosively with oxidants such as bromine, sodium hypochlorite, chromium(vi) oxide, nitric acid or hydrogen peroxide. Explosive reaction occurs when sodium is added to a methanol/chloroform mixture. Avoid also zinc, strong bases, acids, strong and mild oxidising agents, alkali metals, acid chlorides, acid anhydrides, strong and mild reducing agents, sodium oxides, magnesium. Vapour/air mixtures are explosive.
Incompatible Materials	Various plastics, rubber.



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### 11 TOXICOLOGICAL INFORMATION

Health Effects	
On Skin	Liquid irritates and degreases the skin and can cause burns. Toxic if absorbed through the skin. Prolonged contact with the skin may cause dermatitis.
On Eyes	The vapour and liquid severely irritate the eyes and can cause conjunctivitis.
By Inhalation	Toxic if inhaled. The vapour has an anaesthetic effect and in high concentrations induces unconsciousness which can be fatal. Inhalation of the vapour will cause dizziness, stupor, cramps and digestive disturbance. Lower concentrations may cause headache, nausea, vomiting and irritation of the mucous membranes. Will also irritate nasal passage and throat.
By Ingestion	Toxic by ingestion. If swallowed the material will cause irritation of the gastro-intestinal tract. Symptoms may include pain in the mouth, diarrhoea, and vomiting. Ingestion damages the central nervous system (causing temporary or permanent blindness). Prolonged absorption can cause liver and kidney damage. Unconsciousness may develop after some hours and this may be followed by death.
General	May cause harm to the unborn child. Limited evidence of a carcinogenic effect.
Acute Toxicity	Chloroform: Oral LD50 (rat) 695 mg/kg Methanol: Oral LD50 (rat) 5628 mg/kg Xylene mixed isomers: Oral LD50 (rat) 2840 mg/kg

### 12 ECOLOGICAL INFORMATION

Ecotoxicity	Possible harmful effect on aquatic organisms.
Persistence	Moderate potential to bioaccumulate. Not readily biodegradable.
Appraisal	Do not allow to enter waters, waste water or soil.

### 13 DISPOSAL CONSIDERATIONS

Waste Disposal	Either contact the local authorities to determine local policy or use an Approved Specialist Waste Disposal Company. Avoid release to the environment.
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### 14 TRANSPORT INFORMATION

ADR/RID-IMDG-ICAO/IATA	UN Number	1992	Class	3/6.1	Packing Group	II
Proper Shipping Name	FLAMMABLE LIQUID, TOXIC, N.O.S. contains methanol/chloroform/xylenes					
Specific to ADR/RID	Tunnel Restriction	D/E				
Specific to IMDG	Marine Pollutant	No	EMS	F-E, S-D		

### 15 REGULATORY INFORMATION

Refer to relevant national legislation that implements provisions relating to the protection of man or the environment.

The information contained in this Safety Data Sheet does not constitute the users own assessment of workplace risk as required by other prevailing health and safety legislation.



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### 16 OTHER INFORMATION

Full Text of Classification Codes detailed in Section 3

GHS:	Press. Gas	Gasses under pressure.
	Flam. Liq. 2	Flammable liquid, Category 2
	Flam. Liq. 3	Flammable liquid, Category 3
	Carc. 2	Carcinogenicity, Category 2
	Repr. Tox. 1B	Reproductive toxicity, Category 1B
	Repr. Tox. 2	Reproductive toxicity, Category 2
	Acute Tox. O. 3	Acute Toxicity, Oral, Category 3
	Acute Tox. O. 4	Acute Toxicity, Oral, Category 4
	Acute Tox. D. 3	Acute Toxicity, Dermal, Category 3
	Acute Tox. D. 4	Acute Toxicity, Dermal, Category 4
	Acute Tox. I. 3	Acute Toxicity, Inhalation, Category 3
	Acute Tox. I. 4	Acute Toxicity, Inhalation, Category 4
	STOT SE 1	Specific target organ toxicity - single exposure, Category 1
	STOT RE 1	Specific target organ toxicity - repeated exposure, Category 1
	Skin Corr. 1B	Skin corrosion, Category 1B
	Skin Corr. 1C	Skin corrosion, Category 1C
	Skin Irrit. 2	Skin irritation, Category 2
	Eye Irrit. 2	Eye irritation, Category 2
	Acute Aq. Tox. 1	Acute aquatic toxicity, Category 1
	H225	Highly flammable liquid and vapour.
	H226	Flammable liquid and vapour.
	H302	Harmful if swallowed.
	H331	Toxic if inhaled.
	H301+H311+H331	Toxic if swallowed, in contact with skin or if inhaled.
	H312+H332	Harmful in contact with skin or if inhaled.
	H314	Causes severe skin burns and eye damage.
	H315	Causes skin irritation.
	H319	Causes serious eye irritation.
	H351	Suspected of causing cancer.
	H360D	May damage the unborn child.
	H361d	Suspected of damaging the unborn child.
	H370	Causes damage to organs.
	H372	Causes damage to organs through prolonged or repeated exposure.
	H400	Very toxic to aquatic life.
EC:	F: R11	Highly flammable.
	R10	Flammable.
	T: R23	Toxic by inhalation.
	T: R23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
	T+:R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.
	Xn: R22	Harmful if swallowed.
	Xn: R20/21	Harmful by inhalation and in contact with skin.
	R48/20/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation and if swallowed.
	C: R34	Causes burns.
	Xi: R38	Irritating to skin.
	Carc. Cat 3: R40	Possible risks of irreversible effects.
	N: R50	Very toxic to aquatic organisms.
	Xn: Repr. Cat 3: R63	Possible risk of harm to the unborn child.

Current Revision

18/09/2015

Update to section 9 – Physical and Chemical Properties, Flash Point.

The information in this Safety Data Sheet is, to the best of the Supplier's knowledge and belief, accurate and reliable as of the date indicated. It provides guidance on health, safety and environmental aspects of the substance/mixture and should not be construed as any guarantee of technical performance or suitability for particular applications. The user is responsible for ensuring that the requirements of relevant legislation are complied with.