

Creation Date 27-May-2010

Revision Date 24-Nov-2010

Revision Number 1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Identifier

Product Description:

Aqualine® Complete 5

Cat No.

K/2000/15, K/2000/17, K/2000/08

Synonyms

Karl Fischer Reagent

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

Recommended Use

Laboratory chemicals

Uses advised against

No Information available

Details of the supplier of the safety data sheet

Company

Fisher Scientific UK

Bishop Meadow Rd

Loughborough, Leicestershire, Great Britain

LE115RG

Tel: 01509 231166

E-mail address

begel.sdsdesk@thermofisher.com

Emergency Telephone Number

Tel: 01509 231166 Chemtrec US: (800) 424-9300

Chemtrec EU: (202) 483-7616

2. HAZARDS IDENTIFICATION

Classification of the substance or mixture

REGULATION (EC) No 1272/2008

Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Gas	Category 2
Acute Inhalation Toxicity - Dusts and Mists	Category 2
Skin Corrosion / irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Reproductive Toxicity	Category 2
Chronic aquatic toxicity	Category 2

Classification according to EU Directives 67/548/EEC or 1999/45/EC

For the full text of the R phrases mentioned in this Section, see Section 16

Symbol(s)

C - Corrosive

R -phrase(s)

R20 - Harmful by inhalation

R34 - Causes burns

R63 - Possible risk of harm to the unborn child

2. HAZARDS IDENTIFICATION

Label Elements



Signal Word

Danger

Hazard Statements

H330 - Fatal if inhaled
 H411 - Toxic to aquatic life with long lasting effects
 H314 - Causes severe skin burns and eye damage
 H302 - Harmful if swallowed
 H318 - Causes serious eye damage
 H361d - Suspected of damaging the unborn child

Precautionary Statements - EU (§28, 1272/2008)

P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P280 - Wear eye protection/face protection
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P310 - Immediately call a POISON CENTER or doctor/physician
 P281 - Use personal protective equipment as required
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P273 - Avoid release to the environment
 P301+ P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Other Hazards

No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	EC No.	Weight %	CAS-No	Classification	GHSCLAS	REACH Reg. No.
Iodine 7553-56-2	EEC No. 231-442-4	2-13	7553-56-2	Xn;R20/21 N;R50	Acute Tox. 4 (H312) Acute Tox. 4 (H332) Aquatic Acute 1 (H400)	-

3. COMPOSITION/INFORMATION ON INGREDIENTS

1-Imidazole 288-32-4	EEC No. 206-019-2	9-14	288-32-4	Xn; R22 C; R34 Repr. Cat. 3; R63	Skin Corr. 1B (H314) Repr. 2 (H361d) Acute Tox. 4 (H302)	-
Diethylene glycol monoethyl ether 111-90-0	EEC No. 203-919-7	65-85	111-90-0	Xn; R20 Xi; R36	Eye Irrit. 2 (H319) Acute Tox. 4 (H332)	-
Sulfur dioxide 7446-09-5	EEC No. 231-195-2	3-6	7446-09-5	T;R23 C;R34	Acute Tox. 3 (H331) Skin Corr. 1B (H314) Press. Gas	-

For the full text of the R phrases mentioned in this Section, see Section 16

4. FIRST AID MEASURES**Description of first aid measures****Eye Contact**

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes
Immediate medical attention is required

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes
Immediate medical attention is required

Ingestion

Do not induce vomiting
Call a physician or Poison Control Center immediately

Inhalation

Move to fresh air
If breathing is difficult, give oxygen
Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device
Immediate medical attention is required

Notes to Physician

Treat symptomatically

5. FIRE-FIGHTING MEASURES**Extinguishing media****Suitable Extinguishing Media**

CO₂, dry chemical, dry sand, alcohol-resistant foam
Cool closed containers exposed to fire with water spray

Extinguishing media which must not be used for safety reasons

No information available.

Special hazards arising from the substance or mixture

Keep product and empty container away from heat and sources of ignition
Thermal decomposition can lead to release of irritating gases and vapors
Containers may explode when heated
May form explosive peroxides

Advice for fire-fighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

6. ACCIDENTAL RELEASE MEASURES

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment Ensure adequate ventilation Evacuate personnel to safe areas Keep people away from and upwind of spill/leak Do not get in eyes, on skin, or on clothing

Environmental precautions

Should not be released into the environment

Methods and material for containment and cleaning up

Soak up with inert absorbent material Keep in suitable and closed containers for disposal

7. HANDLING AND STORAGE

Precautions for Safe Handling

Use only under a chemical fume hood Wear personal protective equipment Do not get in eyes, on skin, or on clothing Do not breathe vapors or spray mist If peroxide formation is suspected, do not open or move container

Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, cool and well-ventilated place Keep away from direct sunlight Corrosives area Keep under nitrogen May form explosive peroxides Containers should be dated when opened and tested periodically for the presence of peroxides Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals

Specific End Uses

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure limits

Component

Iodine

Diethylene glycol
monoethyl ether

Sulfur dioxide

European Union	The United Kingdom	France	Belgium	Spain
	STEL: 0.1 ppm; 1.1mg/m ³	VLCT: 0.1 ppm VLCT: 1 mg/m ³	TWA 0.1ppm; TWA 1mg/m ³	VLA-EC: 1 mg/m ³ VLA-EC: 0.1 ppm
		VME: 2 ppm VME: 5 mg/m ³ VLCT: 10 mg/m ³ VLCT: 5 ppm	STEL: 13 mg/m ³ STEL: 5 ppm TWA: 2 ppm TWA: 5.3 mg/m ³	VLA-EC: 5 ppm VLA-EC: 13 mg/m ³ VLA-ED: 2 ppm VLA-ED: 5.3 mg/m ³

Component

Iodine

Diethylene glycol
monoethyl ether

Sulfur dioxide

Italy	Portugal	The Netherlands	Finland	Denmark
	Ceiling: 0.1 ppm	0.1ppm MAC; 1mg/m ³ MAC	STEL: 0.1 ppm STEL: 1.1 mg/m ³	Ceiling: 1 mg/m ³ Ceiling: 0.1 ppm
		32 ppm MAC; 180mg/m ³ MAC		
	STEL: 5 ppm TWA: 2 ppm	STEL: 0.7 mg/m ³ MAC: 2 ppm MAC: 5 mg/m ³	TWA: 5 mg/m ³ TWA: 2 ppm TWA: 2.7 mg/m ³ TWA: 1 ppm STEL: 13 mg/m ³ STEL: 4 ppm STEL: 11 mg/m ³ STEL: 5 ppm	TWA: 0.5 ppm TWA: 1.3 mg/m ³

Component

Austria	Switzerland	Poland	Norway	Ireland
---------	-------------	--------	--------	---------

Component	Austria	Switzerland	Poland	Norway	Ireland
Iodine	STEL: 1 mg/m ³ STEL: 0.1 ppm MAK: 0.1 ppm MAK: 1 mg/m ³ Ceiling: 0.1 ppm Ceiling: 1 mg/m ³	STEL: 0.1 ppm STEL: 1 mg/m ³ MAK: 0.1 ppm MAK: 1 mg/m ³	NDS: 1 mg/m ³	Ceiling: 0.1 ppm Ceiling: 1 mg/m ³	STEL: 0.1 ppm STEL: 1 mg/m ³
Diethylene glycol monoethyl ether		STEL: 100 mg/m ³ MAK: 50 mg/m ³			
Sulfur dioxide	STEL: 4 ppm STEL: 10 mg/m ³ MAK: 5 mg/m ³ MAK: 2 ppm	STEL: 1.3 mg/m ³ STEL: 0.5 ppm MAK: 0.5 ppm MAK: 1.3 mg/m ³	NDSch: 5 mg/m ³ NDS: 2 mg/m ³	TWA: 0.8 ppm TWA: 2 mg/m ³	TWA: 5 mg/m ³ TWA: 2 ppm STEL: 5 ppm STEL: 13 mg/m ³

Derived No Effect Level (DNEL) No information available.
Predicted No Effect Concentration (PNEC) No information available.
Exposure controls
Engineering Measures Use only under a chemical fume hood Ensure that eyewash stations and safety showers are close to the workstation location
Personal protective equipment
Eye Protection Safety glasses with side-shields
Hand Protection Protective gloves
Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure
Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced
Hygiene Measures Handle in accordance with good industrial hygiene and safety practice
Environmental exposure controls No information available.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State Liquid
Appearance Brown
odor Alcohol-like
pH No information available.
Vapor Density > 1.0
Boiling Point/Range No information available.
Melting Point/Range No information available.
Flash Point No information available.
Water Solubility miscible
Molecular Formula Solution

10. STABILITY AND REACTIVITY

Reactivity
Chemical Stability
 Stable under normal conditions. May form explosive peroxides.

Possibility of Hazardous Reactions
Hazardous Polymerization Hazardous polymerization does not occur.
Hazardous Reactions . None under normal processing..

Conditions to Avoid

Incompatible products, Heat, flames and sparks, Extremes of temperature and direct sunlight.

Incompatible Materials

Strong oxidizing agents, Reducing agents, Strong acids, Bases, Acid anhydrides, Acid chlorides, Metals.

Hazardous Decomposition Products

Carbon monoxide (CO). Carbon dioxide (CO₂). Nitrogen oxides (NO_x). Sulfur oxides.

11. TOXICOLOGICAL INFORMATION

Information on Toxicological Effects**Acute Toxicity****Product Information**

No acute toxicity information is available for this product

Component Information**Component**

Iodine

1-Imidazole

Diethylene glycol monoethyl ether

Sulfur dioxide

	LD50 Oral	LD50 Dermal	LC50 Inhalation
Iodine	14 g/kg (Rat)		
1-Imidazole	220 mg/kg (Rat)		
Diethylene glycol monoethyl ether	1920 mg/kg (Rat)	4200 µL/kg (Rabbit) 6 mL/kg (Rat)	5240 mg/m ³ (Rat) 4 h
Sulfur dioxide			Per CGA P-20: 2500 ppm/1hr (Rat)

Chronic Toxicity**Carcinogenicity**

There are no known carcinogenic chemicals in this product

Sensitization**Mutagenic Effects****Reproductive Effects****Developmental Effects****Teratogenicity****Target Organs****Other Adverse Effects****Endocrine Disruptor Information**

No information available.

Mutagenic effects have occurred in humans.

Experiments have shown reproductive toxicity effects on laboratory animals

Developmental effects have occurred in experimental animals

Teratogenic effects have occurred in experimental animals.

Skin Respiratory system Eyes Gastrointestinal tract (GI) Central nervous system (CNS) Blood Liver Kidney spleen

Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information

None known

12. ECOLOGICAL INFORMATION

Toxicity**Ecotoxicity effects**

Do not empty into drains

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Iodine		Oncorhynchus mykiss: LC50 = 1,7 mg/l/96 h		EC50 = 0,2 mg/l/48 h

12. ECOLOGICAL INFORMATION				
1-Imidazole	130 mg/L EC50 = 72 h 82 mg/L EC50 = 96 h	280 mg/L LC50 48 h	= 1200 mg/L EC50 Pseudomonas putida 17 h = 231 mg/L EC50 Photobacterium phosphoreum 30 min	341.5 mg/L EC50 = 48 h
Diethylene glycol monoethyl ether		11400-15700 mg/L LC50 96 h 13400 mg/L LC50 96 h 11600-16700 mg/L LC50 96 h 19100-23900 mg/L LC50 96 h 10000 mg/L LC50 96 h		3940 - 4670 mg/L EC50 48 h

Persistence and degradability

No information available

Bioaccumulative potential

No information available.

Component	log Pow
Iodine	2.49
1-Imidazole	0
Diethylene glycol monoethyl ether	0

Mobility in soil

Results of PBT and vPvB assessment

Other adverse effects

No information available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from Residues / Unused Products

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification

Contaminated Packaging

Empty containers should be taken for local recycling, recovery or waste disposal

14. TRANSPORT INFORMATION

IMDG/IMO

UN-No UN1760
 Hazard Class 8
 Packing Group III
 Proper Shipping Name CORROSIVE LIQUID, N.O.S.

ADR

UN-No UN1760
 Hazard Class 8

14. TRANSPORT INFORMATION

Packing Group III
Proper Shipping Name CORROSIVE LIQUID, N.O.S.

IATA

UN-No UN1760
Hazard Class 8
Packing Group III
Proper Shipping Name CORROSIVE LIQUID, N.O.S.*

15. REGULATORY INFORMATION

Safety, health and environmental regulations/legislation specific for the substance or mixture

International Inventories

Component	EINECS	ELINCS	NLP	TSCA	DSL	NDSL	PICCS	ENCS	CHINA	AICS	KECL
Iodine	231-442-4	-		X	X	-	X	-	X	X	KE-21023 X
1-Imidazole	206-019-2	-		X	X	-	X	X	X	X	KE-20937 X
Diethylene glycol monoethyl ether	203-919-7	-		X	X	-	X	X	X	X	KE-10467 X
Sulfur dioxide	231-195-2	-		X	X	-	X	X	X	X	KE-32567 X

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory Lists

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japan Existing and New Chemical Substances

CHINA - China Inventory of Existing Chemical Substances

AICS - Inventory of Chemical Substances

KECL - Existing and Evaluated Chemical Substances

Chemical Safety Assessment

16. OTHER INFORMATION

Text of R phrases mentioned in Section 2-3

R20 - Harmful by inhalation

R22 - Harmful if swallowed

R23 - Toxic by inhalation

R34 - Causes burns

R36 - Irritating to eyes

R50 - Very toxic to aquatic organisms

R63 - Possible risk of harm to the unborn child

R20/21 - Harmful by inhalation and in contact with skin

Revision Date

24-Nov-2010

16. OTHER INFORMATION

Revision Summary Not applicable

This safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer

The information provided on this SDS 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 guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as 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 material or in any process, unless specified in the text

End of Safety Data Sheet