

Section 1. Identification**1.1 Product Identifier** 4418

Product Name	KARL FISHER REAGENT - PYRIDINE FREE
CAS Number	Mixture
REACH Registration No	A registration number is not available as the substance or its uses are exempt, the annual tonnage does not require a registration or the registration is envisaged for a later date.

1.2 Relevant identified uses of the substance or mixture & uses advised against

Uses of Material	Chemical for industrial and laboratory use. Not suitable for domestic use.
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1.3 Supplier Vickers Laboratories Ltd

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(Have this document to hand)**Section 2. Hazards Identification****2.1 Classification of the substance or mixture****Classification according to regulation 1272/2008/EC**

Flammable liquid, category 2	H225: Highly flammable liquid and vapour.
Skin corrosion/irritation, category 2	H315: Causes skin irritation.
Acute toxicity, category 4 (dermal)	H312: Harmful in contact with skin.
Acute toxicity, category 4 (inhalation)	H332: Harmful if inhaled.
Serious eye damage/irritation, category 1	H318: Causes serious eye damage.
Spec target organ tox - single, category 3	H335: May cause respiratory irritation.

2.2 Label elements**Labelling according to regulation 1272/2008/EC**

Signal word	Danger
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Hazard Pictograms



Hazard Statements Highly flammable liquid and vapour. Harmful in contact with skin. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. Harmful if inhaled.

Precautionary Statements Keep away from heat / sparks/open flames/hot surfaces - No smoking. Avoid breathing dust / fume / gas / mist / vapours / spray. 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 and continue rinsing. Immediately call a POISON CENTER or doctor/physician. In case of fire: Use sand, earth, dry powder or foam extinguisher.

Section 3. Composition

3.2 Mixtures

Component	CAS No.	EEC No.	REACH No.	Conc w/w	CLP Classification (1272/2008/CE)
Karl fisher reagent	Mixture			>99%	Flam. Liq. 2, Skin Irrit. 2, Acute Tox. 4 (D), Acute Tox. 4 (I), Eye Dam. 1, STOT SE 3 (I)

Section 4. First Aid

4.1 Description of first aid measures

Eyes	Irrigate thoroughly with plenty of water for at least 10 minutes, holding the eye open. OBTAIN MEDICAL ATTENTION.
Skin	Wash off skin thoroughly with water. Remove contaminated clothing immediately and wash before re-use. In severe cases or if exposure has been great, OBTAIN MEDICAL ATTENTION.
Inhalation	Remove from exposure. Keep warm and at rest. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. If unconscious place in the recovery position. OBTAIN MEDICAL ATTENTION URGENTLY.
Ingestion	If conscious give plenty of water to drink. Do not induce vomiting. If there is difficulty in breathing give oxygen if available. If breathing stops or shows signs of failing, apply artificial resuscitation. If unconscious place in the recovery position. OBTAIN MEDICAL ATTENTION URGENTLY.
Personal protection for first aiders	Wear protective gloves / eye protection.

4.2 Most important symptoms and effects, both acute & delayed.

No further relevant information available.

4.3 Indication of any immediate medical attention and special treatment needed.

No further relevant information available.

Section 5. Fire Fighting

5.1 Extinguishing media

Extinguishing Media	Alcohol resistant foam, dry powder, carbon dioxide or vaporising liquid. Use water spray to keep fire exposed containers cool.
Unsuitable Media	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards	Vapour-air mixtures are explosive. Vapours may flow along surfaces to distant ignition sources and flash back.
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5.3 Advice for firefighters

Advice for firefighters	Evacuate area immediately. Keep up wind. Avoid exposure to toxic vapours and fumes. Fire-fighters should wear protective clothing and breathing apparatus.
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Section 6. Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal Protection Ensure no sources of ignition. Avoid breathing vapour. Use approved personal protective equipment. Evacuate area immediately. Do not allow general use of area until it is safe to do so. Beware : vapour is heavier than air and will tend to accumulate at low spots.

6.2 Environmental precautions

Environmental Keep material out of sewers, storm drains, surface waters and soil. Notify the Environmental Agency and local Environmental Health Officer if major spillage occurs.

6.3 Methods and material for containment and cleaning up

Major Spillage Contain and absorb on inert material. Transfer absorbent to salvage container for removal. Wash area down with copious amounts of water.

Minor Spillage Contain and absorb on inert material. Transfer absorbent to container for removal. Allow solvent to evaporate in remote area, then dispose of absorbent as solid chemical waste. Wash area down with copious amounts of water.

6.4 Reference to other sections

See section 8.2 for information on protective equipment and section 13 for information on disposal.

Section 7. Storage & Handling

7.1 Precautions for safe handling

All transfer systems should be earthed to prevent accumulation of static electricity. Avoid contact with skin and eyes. Do not breath vapours. Do not allow to contaminate clothing.

Ensure Local Exhaust Ventilation maintains vapour concentrations below the recommended limits.

7.2 Conditions for safe storage, including any incompatibilities

Well ventilated, cool, dry storage . Protect from direct sun and store away from sources of ignition. Keep containers closed when not in use.

7.3 Specific end use(s)

See section 1.2.

Section 8. Workplace Exposure & Personal Protection

8.1 Control parameters

Component	CAS No	Concentration	Workplace Exposure Limits	
			Long Term (8hr TWA)	Short Term 15min period)
Karl fisher reagent	Mixture	>99%	-	-

Exposure data source(s) No occupational exposure data currently available.

8.2 Exposure controls

Respiratory Protection Use L.E.V. or natural ventilation to reduce vapour concentrations to a minimum. If not, use a well maintained chemical cartridge organic vapour respirator, or use self contained breathing apparatus.

Hand Protection Use solvent resistant gloves.

Eye Protection Use tightly fitting chemical splash proof glasses or goggles.

Skin Protection Avoid contact with skin. If skin contact or contamination of clothing is likely, protective clothing must be worn.

Special Hazards No special precautions required.

Section 9. Physical & Chemical Properties

9.1 Information on basic physical and chemical properties

Appearance Orange-brown to dark orange-brown solution.
Odour Pungent.
pH Not applicable
Boiling Point Not available

Melting Point	Not applicable
Flash Point	21 °C (Closed cup)
Upper Flammable Limit	Not applicable
Lower Flammable Limit	Not applicable
Auto Ignition	Not applicable
Explosive Properties	Moderate/severe in confined spaces.
Oxidising Properties	No.
Vapour Pressure	Not applicable
Relative Density	0.9000
Water Solubility	Completely miscible in water.

9.2 Other information

No data available.

Section 10. Stability & Reactivity

10.1	Reactivity	No data available.
10.2	Chemical Stability	Stable under normal conditions
10.3	Possibility of hazardous reactions	No data available.
10.4	Conditions to Avoid	Hot surfaces, naked flames or other sources of ignition.
10.5	Incompatible Materials	Strong oxidising agents.
10.6	Hazardous Decomposition Products	May produce hazardous fumes if involved in a fire.

Section 11. Toxicological Information

11.1 Information on toxicological effects

Eyes	Causes serious eye damage.
Skin	Harmful in contact with skin. Can be absorbed through the skin and may cause irritation and dermatitis.
LD50 Skin	Not available
Ingestion	Harmful if swallowed.
LD50 Oral	Not available
Inhalation	High concentrations of vapour will produce irritation of the eyes and respiratory tract. The vapour is irritating and can cause gastrointestinal effects (eg. anorexia, nausea, vomiting, Further exposure will induce confusion, drowsiness, stupor and finally unconsciousness.
LD50 Inhalation	Not available
TCLo	Not available
Carcinogenicity	Not considered to be a carcinogen.
Mutagenicity	May be a mutagen.
Reproductive Effects	At low concentrations possesses no hazard to reproduction or teratogenic effects.
Other Information	The vapour can be detected from its smell at 1 ppm. This does not, however, act as a reliable warning due to olfactory fatigue.

Section 12. Ecological

12.1	Toxicity	Moderately toxic to mammals, fish and bacteria.
	LC50 Algal	Not available
	LC50 Crustacea	Not available
	LC50 Fish	Not available
12.2	Persistence and degradability	No data available.
12.3	Bioaccumulative potential	No data available.
12.4	Mobility in soil	No data available.

12.5 Results of PBT & vPvB assessment Assessment not required.

12.6 Other adverse effects None known at present.

Section 13. Disposal Considerations

13.1 Waste treatment methods

Disposal Methods Dispose of in a licensed incinerator for organic solvents. Do not dispose of as domestic waste. Never dispose of into water courses or sewerage systems due to high risk of explosion.

Contaminated Packaging Wash out containers with water. Use a licensed waste disposer.

Section 14. Transport Information

14.1 UN Number 1993

14.2 Proper Shipping Name Flammable liquid, N.O.S. (o-Xylene, n-Butanol)

14.3 Transport classes

UN classification 3

Subsidiary hazard(s) None

Transport category 3

ADR Hazard ID 30

Tunnel Restriction Code D/E

14.4 Packing Group III

14.5 Environment hazards See section 12.

14.6 Special precautions for user No special precautions required.

14.7 Transport in bulk Not transported in bulk.



Section 15. Regulatory Information

15.1 Safety, health and environment regulations specific for substance/mixture.

Classification, Labeling & Packaging of Substances & Mixtures Regulations (1272/2008/CE)

Classification Flammable liquid, category 2; Skin corrosion/irritation, category 2; Acute toxicity, category 4 (dermal); Acute toxicity, category 4 (inhalation); Serious eye damage/irritation, category 1; Spec target organ tox - single, category 3

Signal word Danger

Hazard Pictograms



Hazard Statements H225, H312, H315, H318, H335, H332
Highly flammable liquid and vapour. Harmful in contact with skin. Causes skin irritation. Causes serious eye damage. May cause respiratory irritation. Harmful if inhaled.

Precautionary Statements P210, P261, P280, P305+P351+P338, P310, P370,
Keep away from heat / sparks/open flames/hot surfaces - No smoking. Avoid breathing dust / fume / gas / mist / vapours / spray. 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 and continue rinsing. Immediately call a POISON CENTER or doctor/physician. In case of fire: Use sand, earth, dry powder or foam extinguisher.

15.2 Chemical safety assessment

Assessment not required.

Section 16. Other Information

The information contained in this document only covers the hazards presented by this material, it DOES NOT constitute a workplace risk assessment. See sections 11 for toxicological information and section 12 for ecological information.

Revision number: 1.2 (Supercedes revision 1.1)

Revision date: 16 April 2021

Reviewed by chemist: 16 April 2021

Printed date: 12 August 2023

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