

SAFETY DATA SHEET**Lugols Iodine**

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product identifier**

Product name Lugols Iodine
Product number PL.7052,PL.7053,PL.7053-2

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

Identified uses Laboratory reagent.
Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier Pro-Lab Diagnostics
3 Bassendale Road
Wirral
Merseyside
CH62 3QL
Tel: 0151 353 1613
Fax: 0151 353 1614
mowen@pro-lab.com

1.4. Emergency telephone number

Emergency telephone +44 (0)151 353 1613 Monday to Friday 9.00 to 17.00
+44 (0)7714 429 646 outside the above hours

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture****Classification**

Physical hazards Not Classified
Health hazards Not Classified
Environmental hazards Not Classified

Classification (67/548/EEC or 1999/45/EC) ---

2.2. Label elements

Hazard statements NC Not Classified
Supplemental label information EUH210 Safety data sheet available on request.

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients**3.2. Mixtures**

Lugols Iodine

Ethanol			2.5 - <5%
CAS number: 64-17-5 EC number: 200-578-6			
Substance with National workplace exposure limits.			
Classification		Classification (67/548/EEC or 1999/45/EC)	
Flam. Liq. 2 - H225		F; R11	
Potassium iodide			1 - <2.5%
CAS number: 7681-11-0 EC number: 231-659-4			
Classification		Classification (67/548/EEC or 1999/45/EC)	
Acute Tox. 4 - H302		Xn; R22. Xi; R36/38	
Skin Irrit. 2 - H315			
Eye Irrit. 2 - H319			
Iodine			0.5 - <1%
CAS number: 7553-56-2 EC number: 231-442-4			
M factor (Acute) = 1			
Classification		Classification (67/548/EEC or 1999/45/EC)	
Acute Tox. 4 - H312		Xn; R20/21. N; R50	
Acute Tox. 4 - H332			
Aquatic Acute 1 - H400			
Methanol			0.25 - <0.5%
CAS number: 67-56-1 EC number: 200-659-6			
			REACH registration number: 01-2119433307-44-XXXX
Classification		Classification (67/548/EEC or 1999/45/EC)	
Flam. Liq. 2 - H225		F; R11. T; R23/24/25, R39/23/24/25	
Acute Tox. 3 - H301			
Acute Tox. 3 - H311			
Acute Tox. 3 - H331			
STOT SE 1 - H370			

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.
Skin contact	Wash skin thoroughly with soap and water.
Eye contact	Remove any contact lenses and open eyelids wide apart. Continue to rinse.

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

Inhalation	Irritation of nose, throat and airway.
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Ingestion	May cause discomfort if swallowed.
Skin contact	Prolonged skin contact may cause redness and irritation.
Eye contact	May cause temporary eye irritation.

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

Notes for the doctor	The severity of the symptoms described will vary dependent on the concentration and the length of exposure.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapours.
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5.3. Advice for firefighters

Special protective equipment for firefighters	Use protective equipment appropriate for surrounding materials.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet.
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6.2. Environmental precautions

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.
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6.4. Reference to other sections

Reference to other sections	See Section 11 for additional information on health hazards. For waste disposal, see Section 13.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Read and follow manufacturer's recommendations.
Advice on general occupational hygiene	Avoid contact with eyes and prolonged skin contact.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Store in a cool and well-ventilated place.
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7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.
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SECTION 8: Exposure Controls/personal protection

Lugols Iodine

8.1. Control parameters

Occupational exposure limits

Ethanol

Long-term exposure limit (8-hour TWA): WEL 1000 ppm 1920 mg/m³

Iodine

Short-term exposure limit (15-minute): WEL 0.1 ppm 1.1 mg/m³

Methanol

Long-term exposure limit (8-hour TWA): WEL 200 ppm 266 mg/m³

Short-term exposure limit (15-minute): WEL 250 ppm 333 mg/m³

Sk

WEL = Workplace Exposure Limit

Sk = Can be absorbed through the skin.

8.2. Exposure controls

Eye/face protection

No specific eye protection required during normal use.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material.

Hygiene measures

No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Dark brown.
Odour	Alcoholic. Almost odourless.
Odour threshold	Not determined.
pH	Not determined.
Melting point	Not relevant.
Initial boiling point and range	Not determined.
Flash point	Not determined.
Evaporation rate	Not determined.
Evaporation factor	Not determined.
Flammability (solid, gas)	Not relevant.
Upper/lower flammability or explosive limits	Not relevant.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	Not determined.
Bulk density	Not determined.

Lugols Iodine

Solubility(ies)	Soluble in water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not relevant.
Decomposition Temperature	Not relevant.
Viscosity	Not determined.
Explosive properties	Not considered to be explosive.
Oxidising properties	The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information

Other information	No information required.
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SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Will not polymerise.
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10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.
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10.5. Incompatible materials

Materials to avoid	No specific material or group of materials is likely to react with the product to produce a hazardous situation.
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10.6. Hazardous decomposition products

Hazardous decomposition products	None at ambient temperatures. Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Notes (oral LD₅₀)	Based on available data the classification criteria are not met.
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ATE oral (mg/kg)	32,100.15247572
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Acute toxicity - dermal

Notes (dermal LD₅₀)	Based on available data the classification criteria are not met.
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ATE dermal (mg/kg)	70,658.89418831
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Acute toxicity - inhalation

Notes (inhalation LC₅₀)	Based on available data the classification criteria are not met.
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ATE inhalation (gases ppm)	164,870.75310605
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ATE inhalation (vapours mg/l)	706.58894188
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Lugols Iodine

Skin corrosion/irritation

Animal data Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Based on available data the classification criteria are not met.

Respiratory sensitisation

Respiratory sensitisation Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Genotoxicity - in vivo Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Not anticipated to present an aspiration hazard, based on chemical structure.

Toxicological information on ingredients.

Ethanol

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 10,470.0

Species Rat

Notes (oral LD₅₀) REACH dossier information. Based on available data the classification criteria are not met.

ATE oral (mg/kg) 10,470.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ vapours mg/l) 124.7

Species Rat

Notes (inhalation LC₅₀) REACH dossier information. Based on available data the classification criteria are not met.

ATE inhalation (vapours mg/l) 124.7

Skin corrosion/irritation

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Animal data Dose: 0.2 ml, 24 hours, Rabbit Primary dermal irritation index: 0 / 8 REACH dossier information. Not irritating.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Mouse: Not sensitising. REACH dossier information. Read across data. Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro Gene mutation: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Genotoxicity - in vivo Chromosome aberration: Negative. REACH dossier information. Based on available data the classification criteria are not met.

Carcinogenicity

IARC carcinogenicity IARC Group 1 Carcinogenic to humans.

Reproductive toxicity

Reproductive toxicity - fertility Two-generation study - NOEL 15 %, Oral, Mouse P REACH dossier information.

Reproductive toxicity - development Maternal toxicity: - NOEL: 16000 ppm, Inhalation, Rat REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOEL 4 mL/Kg, Oral, Rat REACH dossier information. Based on available data the classification criteria are not met.

Potassium iodide

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,000.0

Species Mouse

Notes (oral LD₅₀) Raw material suppliers' information.

ATE oral (mg/kg) 1,000.0

Skin corrosion/irritation

Animal data Dose: 0.5 g, 24 hours, Rabbit REACH dossier information. Moderately irritating. Skin Irrit. 2 - H315 Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation REACH dossier information. Eye Irrit. 2 - H319 Causes serious eye irritation.

Skin sensitisation

Skin sensitisation Patch test - Human: Not sensitising. REACH dossier information.

Germ cell mutagenicity

Genotoxicity - in vitro Negative. REACH dossier information.

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Iodine

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 1,425.0 mg/kg)

Species Rabbit

Notes (dermal LD₅₀) REACH dossier information.

ATE dermal (mg/kg) 1,425.0

Acute toxicity - inhalation

Acute toxicity inhalation (LC₅₀ dust/mist mg/l) 4.588

Species Rat

Notes (inhalation LC₅₀) REACH dossier information.

ATE inhalation (dusts/mists mg/l) 4.588

Skin corrosion/irritation

Human skin model test Cell Viability (11%) 15 minutes REACH dossier information.

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Not sensitising. REACH dossier information.

Reproductive toxicity

Reproductive toxicity - fertility Screening - NOAEL 10 mg/kg/day, Oral, Rat F1 REACH dossier information.

Reproductive toxicity - development Developmental toxicity: - NOAEL: 10 mg/kg/day, Oral, Rat REACH dossier information. No evidence of reproductive toxicity in animal studies.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL 3 mg/l, Oral, Rat REACH dossier information.

Methanol

Acute toxicity - oral

Notes (oral LD₅₀) International Programme on Chemical Safety (IPCS) (1997) Environmental Health Criteria 196: Methanol. Geneva, World Health Organization. Toxic if swallowed.

ATE oral (mg/kg) 300.0

Acute toxicity - dermal

Notes (dermal LD₅₀) Converted acute toxicity point estimate (cATpE) Toxic in contact with skin.

ATE dermal (mg/kg) 300

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Converted acute toxicity point estimate (cATpE) Toxic if inhaled.

Lugols Iodine

ATE inhalation (gases ppm) 700.0

ATE inhalation (vapours mg/l) 3.0

Skin corrosion/irritation

Animal data Dose: 2.5cm x 2.5cm, 20 hours, Rabbit Erythema/eschar score: No erythema (0). Oedema score: No oedema (0). REACH dossier information. Based on available data the classification criteria are not met.

Serious eye damage/irritation

Serious eye damage/irritation Dose: 0.05 ml, 24 hours, Rabbit REACH dossier information. Based on available data the classification criteria are not met.

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising. REACH dossier information. Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure STOT SE 1 - H370

Target organs Eyes Central nervous system

SECTION 12: Ecological Information

12.1. Toxicity

Toxicity Not considered toxic to fish.

Ecological information on ingredients.

Ethanol

Acute toxicity - fish LC₅₀, 96 hours: 14200 mg/l, Pimephales promelas (Fat-head Minnow) REACH dossier information.

Acute toxicity - aquatic invertebrates LC₅₀, 48 hours: 5012 mg/l, Ceriodaphnia dubia REACH dossier information.

Acute toxicity - aquatic plants EC₅₀, 72 hours: 11.5 mg/l, Chlorella vulgaris REACH dossier information.

Chronic toxicity - aquatic invertebrates NOEC, 9 days: 9.6 mg/l, Daphnia magna REACH dossier information.

Potassium iodide

Acute toxicity - fish LC₅₀, 96 hours: 100 mg/l, Brachydanio rerio (Zebra Fish) NOEC, 7 days: 100 mg/l, Brachydanio rerio (Zebra Fish) REACH dossier information.

Acute toxicity - aquatic invertebrates LC₅₀, 24 hours: 226 mg/l, dreissena polymorpha (zebra mussel) REACH dossier information.

Acute toxicity - aquatic plants MIC₁₀₀, 10 days: 356.8 mg/l, Dunaliella salina REACH dossier information.

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Acute toxicity - microorganisms	MIC ₁₀₀ , 24 hours: 358.3 mg/l, Staphylococcus auerus REACH dossier information.
Chronic toxicity - fish early life stage	LC ₁₀₀ , 22 days: 166002.8 mg/l, Onchorhynchus mykiss (Rainbow trout) REACH dossier information.

Iodine

Toxicity	Aquatic Acute 1 - H400 Very toxic to aquatic life.
<u>Acute aquatic toxicity</u>	
LE(C)₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 1.67 mg/l, Onchorhynchus mykiss (Rainbow trout) REACH dossier information.
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hours: 0.55 - 0.59 mg/l, Daphnia magna REACH dossier information.
Acute toxicity - aquatic plants	NOEC, 72 hours: 0.025 mg/l, Desmodesmus subspicatus EC ₅₀ , 72 hours: 0.13 mg/l, Desmodesmus subspicatus REACH dossier information.
Acute toxicity - microorganisms	EC ₅₀ , 3 hours: 280 mg/l, Activated sludge EC ₁₀ , 3 hours: 110 mg/l, Activated sludge REACH dossier information.

Methanol

Acute toxicity - fish	LC ₅₀ , 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill) EC ₅₀ , 96 hours: 12700 mg/l, Lepomis macrochirus (Bluegill) REACH dossier information.
Acute toxicity - aquatic invertebrates	EC ₅₀ , 96 hours: 18260 mg/l, Daphnia magna REACH dossier information.
Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata REACH dossier information.
Acute toxicity - microorganisms	IC ₅₀ , 3 hours: >1000 mg/l, Activated sludge REACH dossier information.

12.2. Persistence and degradability

Persistence and degradability No data available.

Ecological information on ingredients.

Ethanol

Biodegradation	Water - Degradation (74%): 10 days REACH dossier information. The substance is readily biodegradable.
Chemical oxygen demand	1.99 g O ₂ /g substance REACH dossier information.

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Potassium iodide

Biodegradation	Soil - Half-life : 720 hours
	Water and sediment - Half-life : 360 hours
	Water - Degradation (50%): 360 hours
	Calculation method.
	REACH dossier information.
	The substance is readily biodegradable.

Iodine

Phototransformation	Air - DT ₅₀ : 0.14 minutes
	REACH dossier information.

Methanol

Phototransformation	Air - DT ₅₀ : 17.2 days
	REACH dossier information.
Biodegradation	Water - Degradation (95%): 20 days
	Water - Degradation (91%): 15 days
	Water - Degradation (88%): 10 days
	Water - Degradation (76%): 5 days
	REACH dossier information.
	The substance is readily biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient Not determined.

Ecological information on ingredients.

Ethanol

Partition coefficient	log Pow: - 0.35 REACH dossier information.
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Potassium iodide

Bioaccumulative potential	BCF: 2.268, Fish Calculation method. REACH dossier information.
Partition coefficient	Pow: 0.11 REACH dossier information.

Iodine

Partition coefficient	log Pow: 2.49 REACH dossier information.
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Methanol

Partition coefficient	log Pow: -0.77 REACH dossier information.
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12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

Lugols Iodine

Ethanol

Surface tension 24.5 mN/m @ 20°C/68°F REACH dossier information.

Potassium iodide

Adsorption/desorption coefficient Soil - Koc: 13.22 @ 25°C Calculation method. REACH dossier information.

Henry's law constant 3.717E-18 Pa m³/mol @ 25°C Calculation method. REACH dossier information.

Iodine

Adsorption/desorption coefficient Soil - Kd: 0.13 - 7.7 @ 20°C REACH dossier information.

Henry's law constant 0.02961 - 0.03257 Pa m³/mol @ 20°C REACH dossier information.

Methanol

Mobility Mobile.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects Not determined.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Dispose of waste product or used containers in accordance with local regulations

SECTION 14: Transport information

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

Lugols Iodine

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78
and the IBC Code

SECTION 15: Regulatory information

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

National regulations	EH40/2005 Workplace exposure limits. The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (SI 2009 No. 716).
EU legislation	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008	Not classified.: Calculation method.
Revision comments	Classification according to EC 1272/2008 (CLP).
Revision date	09/04/2015
Revision	6
Supersedes date	01/04/2014
SDS number	807
Risk phrases in full	R11 Highly flammable. R20/21 Harmful by inhalation and in contact with skin. R22 Harmful if swallowed. R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R36/38 Irritating to eyes and skin. R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. R50 Very toxic to aquatic organisms.

Lugols Iodine

Hazard statements in full

H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H302 Harmful if swallowed.
H311 Toxic in contact with skin.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H331 Toxic if inhaled.
H332 Harmful if inhaled.
H370 Causes damage to organs (Eyes, Central nervous system).
H400 Very toxic to aquatic life.

The information in this safety data sheet was obtained from current and reliable sources. However, the data is provided without warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond Pro-Lab Diagnostics control, it is the users responsibility to perform thorough testing of this product when used in combination with any other product. It is suggested that users familiarise themselves with this safety data sheet before handling the product.