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 lodine

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 againstNo 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

EUH210 Safety data sheet available on request.

information

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 lodine

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

lodine 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.

Lugols lodine

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.

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 Thermal decor

products

Thermal decomposition or combustion products may include the following substances: Oxides

of carbon. Toxic gases or vapours.

5.3. Advice for firefighters

Special protective equipment

Use protective equipment appropriate for surrounding materials.

for firefighters

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.

6.2. Environmental precautions

Environmental precautions Avoid discharge into drains or watercourses or onto the ground.

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.

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.

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.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

Ethanol

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

lodine

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

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/manufacturer, 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.

Upper/lower flammability or Not rele

explosive limits

Flammability (solid, gas)

Not relevant.

Vapour pressure Not determined.

Vapour density Not determined.

Relative density Not determined.

Bulk density Not determined.

Lugols Iodine

Solubility(ies)

Partition coefficient

Auto-ignition temperature

Not relevant.

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.

SECTION 10: Stability and reactivity

10.1. Reactivity

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

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous

reactions

Will not polymerise.

10.4. Conditions to avoid

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

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.

10.6. Hazardous decomposition products

Hazardous decomposition

None at ambient temperatures. Thermal decomposition or combustion products may include

the following substances: Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

products

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

ATE oral (mg/kg) 32,100.15247572

Acute toxicity - dermal

Notes (dermal LD₅₀) Based on available data the classification criteria are not met.

ATE dermal (mg/kg) 70,658.89418831

Acute toxicity - inhalation

Notes (inhalation LC₅₀)

Based on available data the classification criteria are not met.

ATE inhalation (gases ppm) 164,870.75310605

ATE inhalation (vapours mg/l) 706.58894188

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 (LD₅o

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

Lugols Iodine

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 - NOAEL 15 %, Oral, Mouse P REACH dossier information.

Reproductive toxicity - development

Maternal toxicity: - NOAEL: 16000 ppm, Inhalation, Rat REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure LOAEL 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 (LD₅o

mg/kg)

1,000.0

Species Mouse

Notes (oral LD₅o) 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.

Lugols lodine

lodine

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

4.588

(LC₅₀ dust/mist mg/l)

Species Rat

Notes (inhalation LC₅₀) REACH dossier information.

ATE inhalation

4.588

(dusts/mists mg/l)

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

LC₅o, 48 hours: 5012 mg/l, Ceriodaphnia dubia

invertebrates

REACH dossier information.

Acute toxicity - aquatic

 EC_{50} , 72 hours: 11.5 mg/l, Chlorella vulgaris

plants

REACH dossier information.

Chronic toxicity - aquatic

invertebrates

NOEC, 9 days: 9.6 mg/l, Daphnia magna

REACH dossier information.

Potassium iodide

Acute toxicity - fish LC₀, 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

LC₅₀, 24 hours: 226 mg/l, dreissena polymorpha (zebra mussel)

invertebrates

REACH dossier information.

Acute toxicity - aquatic

MIC₁₀₀, 10 days: 356.8 mg/l, Dunaliella salina

plants

REACH dossier information.

Lugols lodine

Acute toxicity -MIC₁₀₀, 24 hours: 358.3 mg/l, Staphylococcus auerus

microorganisms REACH dossier information.

life stage

Chronic toxicity - fish early LC₁₀₀, 22 days: 166002.8 mg/l, Onchorhynchus mykiss (Rainbow trout)

REACH dossier information.

lodine

Toxicity Aquatic Acute 1 - H400 Very toxic to aquatic life.

Acute aquatic toxicity

LE(C)50 $0.1 < L(E)C50 \le 1$

M factor (Acute) 1

LC₅₀, 96 hours: 1.67 mg/l, Onchorhynchus mykiss (Rainbow trout) Acute toxicity - fish

REACH dossier information.

Acute toxicity - aquatic

invertebrates

LC₅₀, 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 EC₅₀, 72 hours: 0.13 mg/l, Desmodesmus subspicatus

REACH dossier information.

Acute toxicity -EC₅₀, 3 hours: 280 mg/l, Activated sludge EC₁₀, 3 hours: 110 mg/l, Activated sludge microorganisms

REACH dossier information.

Methanol

Acute toxicity - fish LC₅₀, 96 hours: 15400 mg/l, Lepomis macrochirus (Bluegill)

EC₅₀, 96 hours: 12700 mg/l, Lepomis macrochirus (Bluegill)

REACH dossier information.

Acute toxicity - aquatic

invertebrates

EC₅₀, 96 hours: 18260 mg/l, Daphnia magna

REACH dossier information.

Acute toxicity - aquatic

plants

EC₅₀, 96 hours: ~ 22000 mg/l, Pseudokirchneriella subcapitata

REACH dossier information.

Acute toxicity -IC₅₀, 3 hours: >1000 mg/l, Activated sludge

REACH dossier information. microorganisms

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 O₂/g substance REACH dossier information.

Lugols Iodine

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.

lodine

Phototransformation Air - DT₅₀: 0.14 minutes

REACH dossier information.

Methanol

Phototransformation Air - DT₅₀ : 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.

Potassium iodide

Bioaccumulative potential BCF: 2.268, Fish Calculation method. REACH dossier information.

Partition coefficient Pow: 0.11 REACH dossier information.

lodine

Partition coefficient log Pow: 2.49 REACH dossier information.

Methanol

Partition coefficient log Pow: -0.77 REACH dossier information.

12.4. Mobility in soil

Mobility The product is soluble in water.

Ecological information on ingredients.

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.

lodine

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

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

assessment

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.

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.

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.