

Section 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product Identifier**

Methylene Iodide

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

Uses: Refractometer solid sample contact fluid

1.3 Details of the supplier of the safety data sheet

Supplier: Bellingham + Stanley Ltd., Longfield Road, Tunbridge Wells, KENT. TN2 3EY. UK

Telephone: +44 (0) 1892 500400 Fax: +44 (0) 1892 543115 Email: lab.bs.uk@xyleminc.com

1.4 Emergency telephone number For Hazardous Material Chemical Emergencies (Spill, Leak, Fire, Exposure, or Accident)

Call CHEMTREC Day or Night: Within USA and Canada 1-800-424-9300 Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

Section 2: Hazards identification**2.1 Classification of substance or mixture**

Classification according to Regulation (EC) No. 1272/2008:

Acute toxicity, Oral, Category 4

Skin irritation, Category 2

Serious eye damage, Category 1

Specific target organ toxicity – single exposure, Category 3

Classification according to Directive 67/548/EEC or 1999/45/EC:

Xn Harmful

R22 Harmful if swallowed

R36/37/38 Irritating to eyes, respiratory system and skin

2.2 Label elements

According to Regulation (EC) No 1272/2008



Signal word(s): Danger

Hazard statement(s):

H302 Harmful if swallowed

H315 Causes skin irritation

H318 Causes serious eye damage

H335 May cause respiratory irritation

Precautionary statement(s):

P261 Avoid breathing dust/fumes/gas/mist/vapours/ spray

P280 Wear protective gloves/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.

2.3 Other Hazards None**Section 3: Composition/Information on ingredients****3.1 Substances**

Methylene Iodide, Diiodomethane

CAS No. 75-11-6

EC-No. 200-841-5

Formula CH₂I₂**Section 4: First aid measures****4.1 Description of first aid measures**

When in doubt or if symptoms are observed, get medical advice. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

Inhalation: Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration. In case of respiratory tract irritation, consult a physician.

Skin contact: After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

Eye Contact: In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult a physician. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

Ingestion: If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do not induce vomiting. Give nothing to eat or drink.

4.2 Most important symptoms and effects both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Firefighting measures**5.1 Extinguishing Media**

Suitable: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable: No data available

Do not allow run-off from fire-fighting to enter drains or water courses. Do not inhale explosion and combustion gases. Use caution when applying carbon dioxide in confined spaces, carbon dioxide can displace oxygen. Use water spray jet to protect personnel and to cool endangered containers.

5.2 Special hazards arising from the substance or mixture

In case of fire may be liberated: Carbon oxides, hydrogen iodide

5.3 Advice for firefighters

Do not fight fire when fire reaches explosives. Wear self-contained breathing apparatus if necessary.

Section 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Avoid generation of dust.

Do not breathe dust/fume/gas/mist/vapours/spray. Provide adequate ventilation. Use personal protective equipment (see section 8).

6.2 Environmental precautions

Do not allow to enter into surface water or drains.

6.3 Methods and materials for containment and cleaning up

Spilled product must never be returned to the original container for recycling. Collect in closed and suitable containers for disposal. Clear spills immediately.

6.4 Reference to other sections

See sections 8 and 13 for personal protection and disposal information

Section 7: Handling and storage**7.1 Precautions for safe handling**

Wash hands and face thoroughly after working with material. Contaminated clothing should be removed and washed before re-use. Avoid inhalation, skin and eye contact.

7.2 Conditions for safe storage, including any incompatibilities

Storage temperature 15-25°C. Keep container tightly closed in a cool, dry, well-ventilated place.

7.3 Specific end use(s)

Apply samples by pipette. Only small volumes required (drop <1mm diameter). Refer to instructions accompanying samples.

Section 8: Exposure controls/personal protection

8.1 Control parameters

Does not contain substances above concentration limits fixing an occupational exposure limit.

8.2 Exposure Controls

Technical measures and the application of suitable work processes have priority over personal protection equipment. If handled uncovered, arrangements with local exhaust ventilation have to be used.

Wash hands before breaks and after work. Avoid contact with skin and eyes. When using do not eat, drink or smoke. Provide eye shower and label its location conspicuously.

Personal Protective Equipment

As appropriate to the situation and the quantity handled

Eyes/Face: Safety glasses (EN166)

Gloves: Butyl Rubber

Respirator: Usually not necessary

Ventilation: General

Section 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|--------------------|
| (a) Appearance: | Dark yellow liquid |
| (b) Odour: | No data available |
| (c) Odour Threshold: | No data available |
| (d) pH: | No data available |
| (e) Melting point/freezing point: | 6°C |
| (f) Initial boiling point and boiling range: | 182°C |
| (g) Flash point: | 110°C – Closed cup |
| (h) Evaporation rate: | No data available |
| (i) Flammability (solid, gas): | Not applicable |
| (j) Upper/lower flammability or explosive limits: | No data available |

| | |
|---|-------------------------------|
| (k) Vapour pressure: | No data available |
| (l) Vapour density: | No data available |
| (m) Relative density: | 3.33 g/cm ³ (20°C) |
| (n) Solubility(ies): | Water 0.83 g/L (25°C) |
| (o) Partition coefficient: n-octanol/water: | 2.3 (20°C) |
| (p) Auto-ignition temperature: | No data available |
| (q) Decomposition temperature: | No data available |
| (r) Viscosity: | 2.8 mPas (20°C) Dynamic |
| (s) Explosive properties: | Not applicable |
| (t) Oxidising properties: | Not applicable |

9.2 Other information

No data available

Section 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical Stability

The product is chemically stable under standard ambient conditions (room temperature)

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Alkali metal salts, strong oxidising agents, strong bases, metals, forms shock sensitive mixtures with certain other materials, lithium, potassium, sodium/sodium oxides and its alloys.

10.6 Hazardous decomposition products

No data available

Section 11: Toxicological information

11.1 Information on toxicological effects

| | | | |
|-----------------------------|-------------------|---------------------------|--|
| Eyes: | No data available | STOT – single exposure: | Inhalation, may cause respiratory irritation |
| Skin: | No data available | STOT – repeated exposure: | No data available |
| Inhalation: | No data available | Carcinogenicity: | No indication of human carcinogenicity |
| Ingestion: | No data available | Mutagenicity: | No data available |
| Intraperitoneal LD50 (rat): | 403 mg/kg | Reproductive Toxicity: | No data available |
| Subcutaneous LD50 (mouse): | 830 mg/kg | Aspiration hazard | No data available |

Section 12: Ecological information

12.1 Toxicity

No data available

12.4 Mobility in soil

No data available

12.2 Persistence and degradability

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.3 Bioaccumulative potential

No data available

12.6 Other adverse effects

No data available

Section 13: Disposal considerations

13.1 Waste treatment measures

Dispose of according to legislation. Consult the appropriate local waste disposal expert about waste disposal.

Waste code product: No data available

Section 14: Transport information

| | Land transport (ADR/RID) | Sea transport (IMDG) | Air transport (ICAO-TI / IATA-DGR) |
|--|--|----------------------|------------------------------------|
| 14.1 UN number | UN2810 | UN2810 | UN2810 |
| 14.2 UN proper shipping name | Toxic liquid, organic, n.o.s. (DIIDOMETHANE) | | |
| 14.3 Transport hazard class(es) | 6.1 | 6.1 | 6.1 |
| 14.4 Packing group | III | III | III |
| 14.5 Environmental hazards | no | no | no |
| 14.6 Special precautions for user | n/a | EmS F-A, S-A | n/a |
| 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and IBC code | Not intended for transport in bulk | | |

Section 15: Regulatory information

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

Water hazard class (WGK) 2

15.2 Chemical Safety Assessment

No data available

Section 16: Other information

Changes: Update of contact details

The above information is believed to be correct but does not profess to be comprehensive and should only be used as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product when used for the intended purpose and with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product and Bellingham + Stanley Ltd shall not be held liable for any damage resulting from handling or from contact with the above product.

CALIBRATION WITH TEST PIECES

Test pieces are re-usable, traceable standards that can be used to span the high end of a refractometer's range during calibration. Four materials are available as test pieces for use on Abbe refractometers [glass (product code: 10-44), silica (product code: 10-46), calcium fluoride (product code: 10-94) and lithium fluoride (product code: 10-96)] and two for use on RFM type refractometers [glass (product code: 18-15) and silica (product code: 18-16)]. Details of their certified values can be found in their corresponding 'Certificate of Precision' except for 18-15 which must be calibrated on the instrument for which it is to be used.

Application of Test Pieces

Use of Contact Fluid

For a solid sample to be measured on a refractometer, it must be in good optical contact with the instrument's prism. To achieve this, a fluid with a higher refractive index than the sample is used between the prism and the sample. Contact fluid 1-Bromonaphthalene (product code: 10-43) is provided with the Test Piece Kit and has a refractive index of 1.657 at 20.0°C, & 589nm.

IMPORTANT: Before use of this contact fluid, the Health and Safety data provided with this product should be read thoroughly.

Achieving Good Optical Contact

Only a small amount of contact fluid is required to obtain a good optical contact. For a guide, a drop of 1mm in diameter onto the refractometer's prism should be sufficient. The test piece should then be placed, polished surface down, onto the contact fluid (for Abbe applications, position the test piece so that the prism's surface is covered towards the light source end). To ensure complete optical contact between the surfaces, the test piece should be pressed down gently for a few seconds.

If a good optical contact has been achieved, the test piece should not easily slide about on top of the prism.

Troubleshooting

| Abbes | RFMs | Reason |
|---|--|--------------------------------|
| Poor borderline seen through eye piece. | Low quality reading displayed by RFM. | Too little contact fluid. |
| Test piece can be easily moved on top of the prism. | Test piece can be easily moved on top of the prism. | Too much contact fluid. |
| Test piece fixed firmly on top of prism, good sharp borderline. | Test piece fixed firmly on top of prism, high quality value. | Right amount of contact fluid. |

Removing Test Piece

DO NOT twist or slide the test piece off the prism surface, the polished test piece surface may be damaged. Apply IMS (industrial methylated spirits) around the test piece and lift off. Clean any remaining contact fluid off with IMS.

Instrument Setup

RFM300 Series

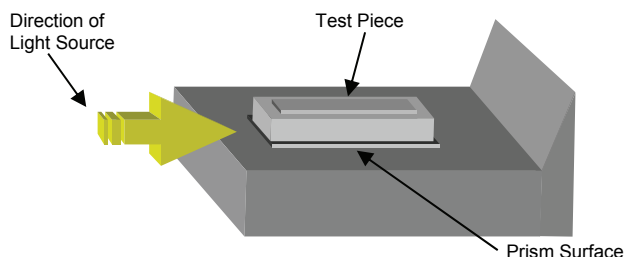
The temperature compensation should be set to "notc", and the prism probe temperature sensor selected. Select the correct scale, as values entered into the instrument for calibration must be in the selected scale. It is recommended that the RFM is temperature controlled to 20.0°C if possible, by a water bath.

Abbe Series

Light Source Adjustment: If a lamp is being used as a light source, the borderline can be sharpened by adjustment of the height of the light source. The best borderline can be achieved by aiming the light source at the test piece and the prism surface interface.

Setting to Transmission Mode: The Abbe should be set in transmission mode, not reflection mode. Therefore, if the instrument is fitted with a lower illumination window, ensure that the shutter is fully closed.

Temperature Control: It is recommended that the Abbe is temperature controlled to 20.0°C by a water bath, if possible.



Calibration Procedure

RFM300 Series

Follow the procedure in the instruction manual.

Apply the test piece (ensuring a good optical contact), and allow a three minute stabilisation period.

Once the test piece has stabilised, the instrument can be spanned by following the procedure in the operating manual.

For certified refractive index and °Brix values of the test piece, refer to its 'Certificate of Precision'.

NOTE: If a prism temperature of 20.0°C was not achieved, the correct value should be calculated from the temperature coefficient information detailed on the 'Certificate of Precision', if available.

Abbe Series

Apply the test piece (ensuring a good optical contact), and allow a three minute stabilisation period.

Once the test piece has stabilised, the instrument can be calibrated by following the procedure in the operating manual. If the instrument is not a direct reading instrument then set the scale position using the Abbe Utility program to find the scale reading for the correct R.I.. For certified refractive index and °Brix values of the test piece, refer to its 'Certificate of Precision'.

NOTE: If a prism temperature of 20.0°C was not achieved, the correct value should be calculated from the temperature coefficient information detailed on the 'Certificate of Precision', if available.