SECTION 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product Description: Iodomethane
Cat No.: 43681
Synonyms: Methyl iodide
CAS-No: 74-88-4
Molecular Formula: C H3 I
Supplier: Alfa Aesar
Avocado Research Chemicals, Ltd.
Shore Road
Port of Heysham Industrial Park
Heysham, Lancashire LA3 2XY
United Kingdom
Office Tel: +44 (0) 1524 850506
Office Fax: +44 (0) 1524 850608

Emergency Telephone Number
Call Carechem 24 at
+44 (0) 1865 407333 (English only);
+44 (0) 1235 239670 (Multi-language)

E-mail address
uktech@alfa.com
www.alfa.com
Product Safety Department

Recommended Use
Laboratory chemicals.

Uses advised against
No Information available

SECTION 2. HAZARD IDENTIFICATION

Classification of the substance or mixture

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Acute Oral Toxicity</td>
<td>Category 3</td>
<td></td>
</tr>
<tr>
<td>Acute Dermal Toxicity</td>
<td>Category 3</td>
<td></td>
</tr>
<tr>
<td>Acute Inhalation Toxicity - Vapors</td>
<td>Category 2</td>
<td></td>
</tr>
<tr>
<td>Skin Corrosion/Irritation</td>
<td>Category 2</td>
<td></td>
</tr>
<tr>
<td>Carcinogenicity</td>
<td>Category 2</td>
<td></td>
</tr>
<tr>
<td>Specific target organ toxicity - (single exposure)</td>
<td>Category 3</td>
<td></td>
</tr>
<tr>
<td>Acute aquatic toxicity</td>
<td>Category 2</td>
<td></td>
</tr>
<tr>
<td>Chronic aquatic toxicity</td>
<td>Category 3</td>
<td></td>
</tr>
</tbody>
</table>

Label Elements

Physical State
Liquid

Appearance
Colorless

Odor
pungent Characteristic

Emergency Overview
Signal Word  Danger

**Hazard Statements**

H330 - Fatal if inhaled
H301 - Toxic if swallowed
H311 - Toxic in contact with skin
H315 - Causes skin irritation
H335 - May cause respiratory irritation
H401 - Toxic to aquatic life
H412 - Harmful to aquatic life with long lasting effects
H351 - Suspected of causing cancer

**Precautionary Statements**

**Prevention**
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P270 - Do not eat, drink or smoke when using this product
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection/face protection

**Response**
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302 + P352 - IF ON SKIN: Wash with plenty of soap and water
P304 + P340 - IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P311 - Call a POISON CENTER or doctor/physician
P330 - Rinse mouth
P362 - Take off contaminated clothing and wash before reuse

**Storage**
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P405 - Store locked up

**Disposal**
P501 - Dispose of contents/container to an approved waste disposal plant

**Physical and Chemical Hazards**
None identified.

**Health Hazards**
Fatal if inhaled. Toxic if swallowed. Toxic in contact with skin. Causes skin irritation. May cause respiratory irritation. Suspected of causing cancer.

**Environmental hazards**
Toxic to aquatic life. Harmful to aquatic life with long lasting effects. Will likely be mobile in the environment due to its volatility. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>74-88-4</td>
<td>&gt;95</td>
</tr>
</tbody>
</table>

### SECTION 4. FIRST AID MEASURES
General Advice
Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.

Eye Contact
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

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

Inhalation
Move to fresh air. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Immediate medical attention is required. If not breathing, give artificial respiration.

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

Most important symptoms and effects
No information available.

Self-Protection of the First Aider
Use personal protective equipment.

Notes to Physician
Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

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

Extinguishing media which must not be used for safety reasons
No information available.

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors.

Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal Precautions
Evacuate personnel to safe areas. Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak.

Environmental Precautions
Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE
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. Do not ingest.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from direct sunlight.

Specific Use(s)
Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>China</th>
<th>Taiwan</th>
<th>Hong Kong</th>
<th>The United Kingdom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TWA: 10 mg/m³</td>
<td>STEL: 20 mg/m³</td>
<td></td>
<td>STEL: 6 ppm 15 min</td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>TWA: 12 mg/m³</td>
<td></td>
<td>STEL: 36 mg/m³ 15 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Component</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH IDLH</th>
<th>European Union</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>TWA: 2 ppm</td>
<td>(Vacated) TWA: 2 ppm</td>
<td>IDLH: 100 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Skin</td>
<td>(Vacated) TWA: 10 mg/m³</td>
<td>TWA: 2 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Skin</td>
<td>TWA: 2 ppm</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 5 ppm</td>
<td>TWA: 10 mg/m³</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>TWA: 28 mg/m³</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Monitoring methods
BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Exposure Controls

Engineering Measures
Use only under a chemical fume hood. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection
Tightly fitting safety goggles (European standard - EN 166)

Hand Protection
Protective gloves

<table>
<thead>
<tr>
<th>Glove material</th>
<th>Breakthrough time</th>
<th>Glove thickness</th>
<th>EU standard</th>
<th>Glove comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural rubber</td>
<td>See manufacturers</td>
<td>-</td>
<td>EN 374</td>
<td>(minimum requirement)</td>
</tr>
<tr>
<td>Nitrile rubber</td>
<td>recommendations</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neoprene</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PVC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inspect gloves before use. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection
Long sleeved clothing
Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly.

Large scale/emergency use

Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Recommended Filter type:** Organic gases and vapours filter Type A Brown conforming to EN14387

Small scale/Laboratory use

Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. **Recommended half mask:** Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141

When RPE is used a face piece Fit Test should be conducted.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls

No information available.

---

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Colorless</td>
</tr>
<tr>
<td>Physical State</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>Pungent Characteristic</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No information available</td>
</tr>
<tr>
<td>Melting Point/Range</td>
<td>-66 °C / -86.8 °F</td>
</tr>
<tr>
<td>Softening Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling Point/Range</td>
<td>42.5 °C / 108.5 °F</td>
</tr>
<tr>
<td>Flash Point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid,gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Explosion Limits</td>
<td><strong>Lower</strong> 8.5 vol%</td>
</tr>
<tr>
<td></td>
<td><strong>Upper</strong> 66 vol%</td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>No data available</td>
</tr>
<tr>
<td>Vapor Density</td>
<td>No data available</td>
</tr>
<tr>
<td>Specific Gravity / Density</td>
<td>2.280</td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble</td>
</tr>
<tr>
<td>Solubility in other solvents</td>
<td>No information available</td>
</tr>
<tr>
<td>Partition Coefficient (n-octanol/water)</td>
<td>log Pow</td>
</tr>
<tr>
<td>Component</td>
<td>Methyl iodide</td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>352 °C / 666 °F</td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>No information available</td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>No information available</td>
</tr>
</tbody>
</table>

| Molecular Formula               | C H3 I                         |
| Molecular Weight                | 141.94                         |

---

**SECTION 10. STABILITY AND REACTIVITY**

Stability

Stable under normal conditions. Moisture sensitive. Light sensitive.
Hazardous Reactions
None under normal processing.

Hazardous Polymerization
Hazardous polymerization does not occur.

Conditions to Avoid
Incompatible products. Excess heat. Exposure to moist air or water. Exposure to light.

Materials to avoid

Hazardous Decomposition Products

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity:

<table>
<thead>
<tr>
<th>Component</th>
<th>LD50 Oral (Rat)</th>
<th>LD50 Dermal (Rabbit)</th>
<th>LC50 Inhalation (Rat) 4h</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>80 mg/kg</td>
<td>LD50 &gt; 2000 mg/kg</td>
<td>LC50 = 1300 mg/m³</td>
</tr>
</tbody>
</table>

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;
   Respiratory No data available
   Skin No data available

(e) germ cell mutagenicity;
   Ames test: positive; Mutagenic effects have occurred in experimental animals

(f) carcinogenicity;
   Category 2
   The table below indicates whether each agency has listed any ingredient as a carcinogen Limited evidence of a carcinogenic effect

<table>
<thead>
<tr>
<th>Component</th>
<th>EU</th>
<th>UK</th>
<th>Germany</th>
<th>IARC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td></td>
<td></td>
<td>Cat. 2</td>
<td></td>
</tr>
</tbody>
</table>

(g) reproductive toxicity;

(h) STOT-single exposure; Category 3
   Results / Target organs Respiratory system

(i) STOT-repeated exposure; No data available
   Target Organs None known.

(j) aspiration hazard; No data available

Other Adverse Effects
Tumorigenic effects have been reported in experimental animals.

Symptoms / effects, both acute and delayed
No information available

SECTION 12. ECOLOGICAL INFORMATION
Ecotoxicity effects

Do not empty into drains.

Persistence and Degradability

Persistence

Not readily biodegradable
Persistence is unlikely, based on information available.

Bioaccumulative Potential

Bioaccumulation is unlikely

<table>
<thead>
<tr>
<th>Component</th>
<th>log Pow</th>
<th>Bioconcentration factor (BCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>1.69</td>
<td>No data available</td>
</tr>
</tbody>
</table>

Mobility in soil

The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. Will likely be mobile in the environment due to its volatility. Disperses rapidly in air

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues / Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not empty into drains.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No UN2644
Proper Shipping Name METHYL IODIDE
Hazard Class 6.1
Packing Group I

IMDG/IMO

UN-No UN2644
Proper Shipping Name METHYL IODIDE
Hazard Class 6.1
Packing Group I

IATA FORBIDDEN FOR IATA TRANSPORT

UN-No UN2644
Proper Shipping Name METHYL IODIDE, FORBIDDEN FOR IATA TRANSPORT
Hazard Class 6.1
Packing Group I

Special Precautions for User

No special precautions required

SECTION 15. REGULATORY INFORMATION
International Inventories

<table>
<thead>
<tr>
<th>Component</th>
<th>The Inventory of Hazardous Chemicals (2015 Edition)</th>
<th>List of dangerous goods GB 12268 - 2012</th>
<th>Taiwan Toxic Chemicals Substances Inventory</th>
<th>IECSC</th>
<th>EINECS</th>
<th>TSCA</th>
<th>DSL</th>
<th>PICCS</th>
<th>ENCS</th>
<th>AICS</th>
<th>KECL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>200-819-5</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

National Regulations

<table>
<thead>
<tr>
<th>Component</th>
<th>Toxic Chemical Substances Control Act</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methyl iodide</td>
<td>Class I (1 wt%)</td>
</tr>
<tr>
<td>74-88-4 (&gt;95)</td>
<td>TRQ = 50 kg</td>
</tr>
</tbody>
</table>

SECTION 16. OTHER INFORMATION

Prepared By Health, Safety and Environmental Department
Creation Date 29-Apr-2010
Revision Date 19-Mar-2018
Revision Summary SDS authoring systems update, replaces ChemGes SDS No. 74-88-4.

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Legend

CAS - Chemical Abstracts Service
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
IECSC - Chinese Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances

WEL - Workplace Exposure Limit
ACGIH - American Conference of Governmental Industrial Hygienists
DNEL - Derived No Effect Level
RPE - Respiratory Protective Equipment
LC50 - Lethal Concentration 50%
NOEC - No Observed Effect Concentration
PBT - Persistent, Bioaccumulative, Toxic

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code
OECD - Organisation for Economic Co-operation and Development
BCF - Bioconcentration factor

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
ENCS - Japanese Existing and New Chemical Substances
AICS - Australian Inventory of Chemical Substances
NZIoC - New Zealand Inventory of Chemicals

WEL - Time Weighted Average
IARC - International Agency for Research on Cancer
PNEC - Predicted No Effect Concentration
LDS0 - Lethal Dose 50%
EC50 - Effective Concentration 50%
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
ATE - Acute Toxicity Estimate
VOC - Volatile Organic Compounds
Key literature references and sources for data
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer
The information provided in this Safety Data Sheet 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 guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered 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 materials or in any process, unless specified in the text.

End of Safety Data Sheet