

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Revision Date 26.05.2017

Version 5.3

SECTION 1. Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Catalogue No. 818153

Product name Diiodomethane for synthesis

REACH Registration Number A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No. 75-11-6

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

Identified uses Chemical for synthesis
For additional information on uses please refer to the Merck Chemicals portal (www.merckgroup.com).

1.3 Details of the supplier of the safety data sheet

Company Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0

Responsible Department LS-QHC * e-mail: prodsafe@merckgroup.com

1.4 Emergency telephone number Please contact the regional company representation in your country.

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Acute toxicity, Category 3, Oral, H301
Acute toxicity, Category 4, Inhalation, H332
Acute toxicity, Category 3, Dermal, H311
Skin irritation, Category 2, H315
Eye irritation, Category 2, H319
Specific target organ toxicity - single exposure, Category 3, Respiratory system, H335
For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

Danger

Hazard statements

H301 + H311 Toxic if swallowed or in contact with skin
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H335 May cause respiratory irritation.

Precautionary statements

Prevention

P280 Wear protective gloves/ protective clothing.

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 818153
Product name Diiodomethane for synthesis

Reduced labelling (≤125 ml)

Hazard pictograms



Signal word

Danger

Hazard statements

H301 + H311 Toxic if swallowed or in contact with skin

Precautionary statements

P280 Wear protective gloves/ protective clothing.

P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

CAS-No. 75-11-6

2.3 Other hazards

None known.

SECTION 3. Composition/information on ingredients

3.1 Substance

Formula CH₂I₂ (Hill)
EC-No. 200-841-5
Molar mass 267,84 g/mol

Hazardous components (REGULATION (EC) No 1272/2008)

Chemical name (Concentration)

CAS-No. Registration number Classification

diiodomethane (≤ 100 %)

75-11-6 *)

Acute toxicity, Category 3, H301

Acute toxicity, Category 4, H332

Acute toxicity, Category 3, H311

Skin irritation, Category 2, H315

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Eye irritation, Category 2, H319

Specific target organ toxicity - single exposure, Category 3, H335

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For the full text of the H-Statements mentioned in this Section, see Section 16.

3.2 Mixture

Not applicable

SECTION 4. First aid measures

4.1 Description of first aid measures

After inhalation: fresh air. If breathing stops: mouth-to-mouth breathing or artificial respiration.

Oxygen if necessary. Immediately call in physician.

After skin contact: wash off with plenty of water. Remove contaminated clothing. Call a physician immediately.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

If swallowed: give water to drink (two glasses at most). Seek medical advice immediately. In exceptional cases only, if medical care is not available within one hour, induce vomiting (only in persons who are wide awake and fully conscious), administer activated charcoal (20 - 40 g in a 10% slurry) and consult a doctor as quickly as possible.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects, Cough, Shortness of breath, Lung oedema, Headache, Nausea, Vomiting, somnolence

4.3 Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Not combustible.

Ambient fire may liberate hazardous vapours.

Fire may cause evolution of:
hydrogen iodide

5.3 Advice for firefighters

Special protective equipment for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Avoid substance contact. Do not breathe vapours, aerosols. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling

Advice on safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Observe label precautions.

Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed. Dry. Protected from light. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorised persons.

Recommended storage temperature see product label.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Engineering measures

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 818153
Product name Diiodomethane for synthesis

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 480 min

splash contact:

Glove material:	Viton (R)
Glove thickness:	0,70 mm
Break through time:	> 480 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 890 Vitoject® (full contact), KCL 890 Vitoject® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Respiratory protection

required when vapours/aerosols are generated.

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls

Do not let product enter drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	light brown
Odour	characteristic
Odour Threshold	No information available.
pH	No information available.
Melting point	6 °C
Boiling point/boiling range	181 °C at 1.013 hPa (decomposition)
Flash point	No information available.
Evaporation rate	No information available.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	No information available.
Relative vapour density	9,25
Density	3,3 g/cm ³ at 20 °C
Relative density	No information available.
Water solubility	0,8 g/l at 25 °C
Partition coefficient: n-octanol/water	log Pow: 2,30 (experimental) (Lit.) Bioaccumulation is not expected.
Auto-ignition temperature	No information available.
Decomposition temperature	No information available.
Viscosity, dynamic	2,8 mPa.s at 20 °C
Explosive properties	Not classified as explosive.
Oxidizing properties	none

9.2 Other data

none

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

SECTION 10. Stability and reactivity

10.1 Reactivity

See section 10.3

10.2 Chemical stability

sensitive to moisture

Sensitivity to light

Sensitive to air.

10.3 Possibility of hazardous reactions

Risk of explosion with:

Alkali metals

Violent reactions possible with:

Strong oxidizing agents, strong alkalis, Zinc, alkali salts

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity

LD50 Rat: 76 mg/kg

(External MSDS)

Symptoms: Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
absorption

Acute inhalation toxicity

LC50 Rat: 1,3 mg/l; 4 h ; dust/mist

(External MSDS)

Symptoms: mucosal irritations, Cough, Shortness of breath, Possible damages:, damage of respiratory tract
absorption

Acute dermal toxicity

LD50 Mouse: 830 mg/kg

(External MSDS)

absorption

Skin irritation

Causes skin irritation.

Eye irritation

Causes serious eye irritation.

Sensitisation

This information is not available.

Germ cell mutagenicity

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

Genotoxicity in vitro

Ames test

Salmonella typhimurium

Result: negative

(Lit.)

Carcinogenicity

This information is not available.

Reproductive toxicity

This information is not available.

Teratogenicity

This information is not available.

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

This information is not available.

Aspiration hazard

This information is not available.

11.2 Further information

After absorption:

Systemic effects:

Lung oedema, Headache, Nausea, Vomiting, somnolence

Absorption can result in damage to:

Liver

Other dangerous properties can not be excluded.

This substance should be handled with particular care.

SECTION 12. Ecological information

12.1 Toxicity

No information available.

12.2 Persistence and degradability

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
Product name	Diiodomethane for synthesis

No information available.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: 2,30

(experimental)

(Lit.) Bioaccumulation is not expected.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (DIIODOMETHANE)
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes
Tunnel restriction code	E

Inland waterway transport (ADN)

Not relevant

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Air transport (IATA)

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (DIIODOMETHANE)
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	no

Sea transport (IMDG)

14.1 UN number	UN 2810
14.2 Proper shipping name	TOXIC LIQUID, ORGANIC, N.O.S. (DIIODOMETHANE)
14.3 Class	6.1
14.4 Packing group	III
14.5 Environmentally hazardous	--
14.6 Special precautions for user	yes

EmS	F-A S-A
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14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard	SEVESO III
Legislation	Not applicable

Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

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Product name	Diiodomethane for synthesis

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer not regulated

Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC not regulated

Substances of very high concern (SVHC)	This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of $\geq 0.1\%$ (w/w).
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National legislation

Storage class	6.1 D
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15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out.

SECTION 16. Other information

Full text of H-Statements referred to under sections 2 and 3.

H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

Training advice

Provide adequate information, instruction and training for operators.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No.	818153
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Labelling

Hazard pictograms



Signal word

Danger

Hazard statements

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P308 + P310 IF exposed or concerned: immediately call a POISON CENTER or doctor/ physician.

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Regional representation

This information is given on the authorised Safety Data Sheet for your country.

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Catalogue No. 818153

Product name Diiodomethane for synthesis

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.