



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830

Date of issue: 4/25/2019 Version: 1.0

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

1.1. Product identifier

Product form : Mixture

Product name : Dibutylboron triflate, 1 M solution in dichloromethane

60669-69-4 CAS-No. Product code : 90026478 Formula : C9H18BF3O3S

Product group · Blend

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

1.2.1. Relevant identified uses

: Laboratory use, Industrial use, Professional use Main use category

Industrial/Professional use spec : For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Supplier

Scafell Organics Molekula Ltd Lingfield Way Darlington - England

T +44 (0) 1949 823777 / +44 (0) 7590 545705

info@molekula.com / kbowen@molekula.com - www.molekula.com

1.4. Emergency telephone number

Emergency number : +44 (0) 7590 545705

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3 H226 Skin corrosion/irritation, Category 1 H314 Carcinogenicity, Category 2 H351 Specific target organ toxicity — Single exposure, Category 3, Narcosis H336

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP)





GHS08





GHS07

GHS02

GHS05

Signal word (CLP) : Danger

Hazard statements (CLP) : H226 - Flammable liquid and vapour.

H314 - Causes severe skin burns and eye damage. H336 - May cause drowsiness or dizziness. H351 - Suspected of causing cancer.

Precautionary statements (CLP) : P201 - Obtain special instructions before use.

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources.

No smoking.

P280 - Wear protective clothing, eye protection, face protection, protective gloves.

P284 - Wear respiratory 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

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
DICHLOROMETHANE	(CAS-No.) 75-09-2 (EC-No.) 200-838-9 (EC Index-No.) 602-004-00-3	68 - 78	Carc. 2, H351
Dibutylboron triflate	(CAS-No.) 60669-69-4 (EC-No.) 612-008-7	22 - 32	Skin Corr. 1B, H314 Eye Dam. 1, H318

Full text of H-statements: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general : If possible show this sheet, if not available show packaging or label. Never give anything by mouth to an unconscious person. Do not leave affected person unattended.

First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable

for breathing. Give oxygen or artificial respiration if necessary. If breathing difficulties

persist : Get medical advice/attention.

First-aid measures after skin contact : After contact with skin, take off immediately all contaminated clothing, and wash

immediately with plenty of water. Do not remove clothing if it sticks to the skin. If irritation

persists, consult a doctor.

First-aid measures after eye contact : Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do.

Continue rinsing. If eye irritation persists: Get medical advice/attention.

First-aid measures after ingestion : Rinse mouth out with water. Do not induce vomiting. Get medical advice/attention.

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

Symptoms/effects after inhalation : May cause drowsiness or dizziness. Burns or irritation of the linings of the mouth, throat,

and gastrointestinal tract. More severe symptoms are also possible.

Symptoms/effects after skin contact : Causes severe burns. May produce skin irritation, blistering, ulcers, and deep scarring.

Redness, pain.

Symptoms/effects after eye contact : Causes serious eye damage. redness, itching, tears. stinging.

Symptoms/effects after ingestion : Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract. Symptoms of

ingestion include drowsiness, weakness, headache, dizziness, nausea, vomiting.

Chronic symptoms : Suspected of causing cancer.

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

Get immediate medical advice/attention.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Dry powder. Sand.
Unsuitable extinguishing media : Do NOT use water jet.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Flammable liquid and vapour.

Explosion hazard : May form flammable/explosive vapour-air mixture.

Hazardous decomposition products in case of fire : Carbon oxides (CO, CO2). hydrogen fluoride. Borane/boron oxides. Sulphur oxides.

5.3. Advice for firefighters

Firefighting instructions

Precautionary measures fire : Keep container tightly closed and away from heat, sparks and flame. Keep away from

: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any

chemical fire. Prevent fire fighting water from entering the environment.

Protection during firefighting : Wear recommended personal protective equipment. Use self-contained breathing

apparatus and chemically protective clothing.

Other information : Warn all persons of toxic hazard.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Do not handle until

Do not handle until all safety precautions have been read and understood. Ventilate the area thoroughly, especially low lying areas (basements, workpits etc). Keep away from combustible materials.

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6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.

Emergency procedures : Evacuate unnecessary personnel. Mark out the contaminated area with signs and prevent

access to unauthorized personnel. Do not touch or walk on the spilled product. Avoid

contact with skin, eyes and clothing.

Measures in case of dust release : Shelter from vapours by keeping upwind. Ventilate the area thoroughly, especially low lying

areas (basements, workpits etc). Special attention should be given to low areas/pits where

flammable vapours can accumulate.

6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. Use self-contained

breathing apparatus and chemically protective clothing.

Emergency procedures : Ventilate area

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Collect spillage. Contain the spilled material by bunding.

Methods for cleaning up : Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible.

Try to stop release if without risk.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Handle empty containers with care because residual vapours are flammable.

Precautions for safe handling : Avoid formation of vapours. Avoid contact with skin, eyes and clothing. Do not handle until

all safety precautions have been read and understood. Ensure that there is a suitable ventilation system. Do not handle in a confined space. Handle under inert gas.

Hygiene measures : Take off immediately all contaminated clothing and wash it before reuse. Contaminated

work clothing should not be allowed out of the workplace. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Ensure adequate ventilation, especially in confined areas. Proper grounding procedures to

avoid static electricity should be followed.

Storage conditions : Keep only in the original container in a cool, well ventilated place away from : Heat

sources, Direct sunlight. Keep container closed when not in use. Air and moisture

sensitive. Light sensitive. Store contents under inert gas.

Incompatible products : Strong oxidisers. alcohols. Acids.

Incompatible materials : Sources of ignition. Direct sunlight. Heat sources. open flames. sparks. Air contact.

Moisture. Water, humidity.

Heat and ignition sources : Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

smoking

Storage area : Keep away from combustible materials. Store below 20 °C. Store in a dark area. Store in

dry protected location to prevent any moisture contact.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters Dibutylboron triflate, 1 M solution in dichloromethane (60669-69-4) Dichloromethane United Kingdom Local name 353 mg/m³ United Kingdom WEL TWA (mg/m³) United Kingdom WEL TWA (ppm) 100 ppm 706 mg/m³ United Kingdom WEL STEL (mg/m³) United Kingdom WEL STEL (ppm) 200 ppm United Kingdom Remark (WEL) Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity) United Kingdom EH40/2005 (Third edition, 2018). HSE Regulatory reference **DICHLOROMETHANE (75-09-2)** IOELV TWA (mg/m³) ≈ 350 mg/m³ UK EU

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DICHLOROMETHANE (75-09-2)			
EU	IOELV STEL (mg/m³)	≈ 1060 mg/m³ UK	
United Kingdom	Local name	Dichloromethane	
United Kingdom	WEL TWA (mg/m³)	353 mg/m³	
United Kingdom	WEL STEL (mg/m³)	706 mg/m³	
United Kingdom	Remark (WEL)	BMGV (Biological monitoring guidance values are listed in Table 2), Sk (Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity)	
United Kingdom	Regulatory reference	EH40. HSE	

8.2. Exposure controls

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Floors should be impervious, resistant to liquids and easy to clean.

Personal protective equipment:

Avoid all unnecessary exposure.

Hand	prote	ctio	n:

The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374

Туре	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Fluoroelastomer (FKM)	6 (> 480 minutes)	0.7		EN 374

Eye protection:

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Use eye protection according to EN 166, designed to protect against liquid splashes.

Туре	Use	Characteristics	Standard
Safety goggles, Face shield	Droplet, vapours	tightly fitting safety goggles, With side shields	EN 166

Skin and body protection:

Emergency safety showers should be available in the immediate vicinity of any potential exposure. Keep suitable chemically resistant protective clothing readily available for emergency use

Туре	Standard
Total impervious protective suits, gloves, and boots must be worn to prevent any contact with the product, Flame retardant antistatic protective clothing	EN 14605

Respiratory protection:

Keep self contained breathing apparatus readily available for emergency use. Where exposure through inhalation may occur from use, respiratory protection equipment is recommended

Device	Filter type	Condition	Standard
Air-Purifying Respirator (APR), reusable	ABEK	Moist condition, Mist formation, Protection for Liquid particles, Vapour protection	EN 14387

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Clear.
Molecular mass : 274.11 g/mol
Colour : Pale yellow.
Odour : No data available.
Odour threshold : No data available
pH : No data available

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Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: No data available
Freezing point	: No data available
Boiling point	: No data available

Flash point : 27 °C

Auto-ignition temperature : No data available
Decomposition temperature : No data available
Flammability (solid, gas) : Flammable
Vapour pressure : No data available
Relative vapour density at 20 °C : No data available
Relative density : 1.271 g/cm3
Solubility : No data available

Log Pow : 1.25

Viscosity, kinematic : No data available
Viscosity, dynamic : No data available
Explosive properties : No data available
Oxidising properties : No data available
Explosive limits : No data available

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Flammable liquid and vapour. May form flammable/explosive vapour-air mixture.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Protect from sunlight. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Air and moisture sensitive.

10.5. Incompatible materials

Strong oxidizers. Acids. Alcohols.

10.6. Hazardous decomposition products

No hazardous decomposition products known at room temperature. Thermal decomposition generates: Carbon oxides (CO, CO2). Boron oxides. hydrogen fluoride. Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

DICHLOROMETHANE (75-09-2) LD50 oral rat > 2000 mg/kg LD50 dermal rat > 2000 mg/kg LC50 inhalation rat (mg/l) 60.14 mg/l/4h

Skin corrosion/irritation : Causes severe skin burns and eye damage.

Additional information : Based on available data, the classification criteria are not met

Serious eye damage/irritation : Serious eye damage, category 1, implicit

Additional information : Based on available data, the classification criteria are not met

Respiratory or skin sensitisation : Not classified

Additional information : Based on available data, the classification criteria are not met

Germ cell mutagenicity : Not classified

Additional information : Based on available data, the classification criteria are not met

Carcinogenicity : Suspected of causing cancer.

Additional information : Based on available data, the classification criteria are not met

Reproductive toxicity : Not classified

Additional information : Based on available data, the classification criteria are not met

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STOT-single exposure : May cause drowsiness or dizziness.

Additional information : Based on available data, the classification criteria are not met

STOT-repeated exposure : Not classified

Additional information : Based on available data, the classification criteria are not met

Aspiration hazard : Not classified

Additional information : Based on available data, the classification criteria are not met

Potential adverse human health effects and : Based on available data, the classification criteria are not met.

symptoms

SECTION 12: Ecological information

12.1. LOXICITY	
Acute aquatic toxicity	: Not classified
Chronic aquatic toxicity	: Not classified

DICHLOROMETHANE (75-09-2)	
LC50 fish 1	193 mg/l 96h
LC50 fish 2	97 mg/l 48h
EC50 other aquatic organisms 1	2.59 g/l 40min
NOEC chronic fish	83-321 - 28days

12.2. Persistence and degradability

Dibutylboron triflate, 1 M solution in dichloromethane (60669-69-4)

Persistence and degradability No data available

DICH		METHANE	/7E 00 2\
DIGH	LURU	MEIRANE	(/5-09-2)

Persistence and degradability No data available.

12.3. Bioaccumulative potential

Dibutylboron triflate, 1 M solution in dichloromethane (60669-69-4)

Log Pow	1.25

Bioaccumulative potential No data available.

DICHLOROMETHANE (75-09-2)

Log Pow 1.25

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Dibutylboron triflate, 1 M solution in dichloromethane (60669-69-4)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII

This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

Component

DICHLOROMETHANE (75-09-2)

This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII
This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

12.6. Other adverse effects

Additional information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product/Packaging disposal recommendations : Dispose in a safe manner in accordance with local/national regulations.

Additional information : Handle empty containers with care because residual vapours are flammable.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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ADR	IMDG	IATA	ADN	RID
14.1. UN number				
2920	2920	2920	2920	2920
14.2. UN proper shipping name				
CORROSIVE LIQUID, FLAMMABLE, N.O.S.	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	Corrosive liquid, flammable, n.o.s.	CORROSIVE LIQUID, FLAMMABLE, N.O.S.	CORROSIVE LIQUID, FLAMMABLE, N.O.S.
Transport document description				
UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dibutylboron triflate, 1 M solution in dichloromethane), 8 (3), II, (D/E)	UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dibutylboron triflate, 1 M solution in dichloromethane), 8 (3), II	UN 2920 Corrosive liquid, flammable, n.o.s. (Dibutylboron triflate, 1 M solution in dichloromethane), 8 (3), II	UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dibutylboron triflate, 1 M solution in dichloromethane), 8 (3), II	UN 2920 CORROSIVE LIQUID, FLAMMABLE, N.O.S. (Dibutylboron triflate, 1 M solution in dichloromethane), 8 (3), II
14.3. Transport hazard class(es)				
8 (3)	8 (3)	8 (3)	8 (3)	8 (3)
8	3	8		3
14.4. Packing group				
II	II	II	II	II
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information	n available			

14.6. Special precautions for user

Overland transport

Classification code (ADR) : CF1
Special provisions (ADR) : 274
Limited quantities (ADR) : 11
Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001, IBC02
Mixed packing provisions (ADR) : MP15
Portable tank and bulk container instructions : T11

(ADR)

Portable tank and bulk container special provisions

(ADR)

Tank code (ADR) : L4BN

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2

Hazard identification number (Kemler No.) : 83

Orange plates

83 2920

: TP2, TP27

Tunnel restriction code (ADR) : D/E
EAC code : •3W
APP code : A(fl)

Transport by sea

Special provisions (IMDG) : 274
Packing instructions (IMDG) : P001
IBC packing instructions (IMDG) : IBC02
Tank instructions (IMDG) : T11

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Tank special provisions (IMDG) : TP2, TP27

EmS-No. (Fire) : F-E

EmS-No. (Spillage) : S-C

Stowage category (IMDG) : C

Stowage and handling (IMDG) : SW1, SW2

Properties and observations (IMDG) : Causes burns to skin, eyes and mucous membranes.

Air transport

PCA Excepted quantities (IATA) : E2 PCA Limited quantities (IATA) : Y840 PCA limited quantity max net quantity (IATA) : 0.5L PCA packing instructions (IATA) : 851 PCA max net quantity (IATA) : 1L CAO packing instructions (IATA) : 855 CAO max net quantity (IATA) : 30L ERG code (IATA) : 8F

Inland waterway transport

Classification code (ADN) : CF1
Special provisions (ADN) : 274
Limited quantities (ADN) : 1 L
Excepted quantities (ADN) : E2
Carriage permitted (ADN) : T

Equipment required (ADN) : PP, EP, EX, A

Ventilation (ADN) : VE01 Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : CF1
Special provisions (RID) : 274
Limited quantities (RID) : 1L
Excepted quantities (RID) : E2

Packing instructions (RID) : P001, IBC02
Mixed packing provisions (RID) : MP15
Portable tank and bulk container instructions (RID) : T11
Portable tank and bulk container special provisions : TP2, TP27

(RID)

Tank codes for RID tanks (RID) : L4BN
Transport category (RID) : 2
Colis express (express parcels) (RID) : CE6
Hazard identification number (RID) : 83

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

Not applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

Contains no REACH substances with Annex XVII restrictions Contains no substance on the REACH candidate list Contains no REACH Annex XIV substances Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations

Germany

Reference to AwSV : Water hazard class (WGK) 3, Highly hazardous to water (Classification according to AwSV,

Annex 1)

12th Ordinance Implementing the Federal

Immission Control Act - 12.BImSchV

: Is not subject of the 12. BlmSchV (Hazardous Incident Ordinance)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed SZW-lijst van mutagene stoffen : None of the components are listed

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NIET-limitatieve lijst van voor de voortplanting

giftige stoffen - Borstvoeding

: None of the components are listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen – Vruchtbaarheid

: None of the components are listed

NIET-limitatieve lijst van voor de voortplanting

giftige stoffen - Ontwikkeling

: None of the components are listed

Denmark

Class for fire hazard : Class II-1 Store unit : 5 liter

Classification remarks : R10 <H226;H314;H336;H351>; Emergency management guidelines for the storage of

flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product

Pregnant/breastfeeding women working with the product must not be in direct contact with

the product

The requirements from the Danish Working Environment Authorities regarding work with

carcinogens must be followed during use and disposal

15.2. Chemical safety assessment

No chemical safety assessment has been carried out for the substance or the mixture by the supplier

SECTION 16: Other information

Data sources : 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, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : None.

Full text of H- and EUH-statements:		
Carc. 2	Carcinogenicity, Category 2	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1	
Skin Corr. 1B	Skin corrosion/irritation, Category 1B	
H226	Flammable liquid and vapour.	
H314	Causes severe skin burns and eye damage.	
H318	Causes serious eye damage.	
H336	May cause drowsiness or dizziness.	
H351	Suspected of causing cancer.	

SDS EU (REACH Annex II)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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