



Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 Date of issue: 4/23/2020 Version: 1.0

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

1.1. Product identifier

Product form : Mixture

Product name : Vinyl bromide, 1M solution in THF

 EC-No.
 : 209-800-6

 CAS-No.
 : 593-60-2

 Product code
 : 90026568

 Formula
 : CH2=CHBr

 Product group
 : Blend

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

1.2.1. Relevant identified uses

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

Industrial/Professional use spec : For professional use only Use of the substance/mixture : For analytical purposes

Scientific research and development

Not for human consumption or veterinary purposes.

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) 3302 000 333

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

1.4. Emergency telephone number

Emergency number : +44 (0) 7769276927

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

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

Flammable liquids, Category 2

Acute toxicity (oral), Category 4

Serious eye damage/eye irritation, Category 2

Carcinogenicity, Category 1A

Specific target organ toxicity — Single exposure, Category 3,

H325

Respiratory tract irritation

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)







GHS02

GHS07

GHS08

Signal word (CLP) : Danger

Hazard statements (CLP) : H225 - Highly flammable liquid and vapour.

H302 - Harmful if swallowed.

H319 - Causes serious eye irritation. H335 - May cause respiratory irritation.

H350 - May cause cancer.

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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 gloves/protective clothing/eye protection/face protection. P301+P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel

unwell

P304+P340 - IF INHALED: Remove person to fresh air and keep 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.

P308+P313 - IF exposed or concerned: Get medical advice/attention.

EUH018 - In use may form flammable/explosive vapour-air mixture.

EUH019 - May form explosive peroxides.

2.3. Other hazards

EUH-statements

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

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]
Tetrahydrofuran	(CAS-No.) 109-99-9 (EC-No.) 203-726-8 (EC Index-No.) 603-025-00-0	88 - 90	Flam. Liq. 2, H225 Carc. 2, H351 Eye Irrit. 2, H319 STOT SE 3, H335
Vinyl Bromide	(CAS-No.) 593-60-2 (EC-No.) 209-800-6 (EC Index-No.) 602-024-00-2	10 - 12	Press. Gas Flam. Gas 1, H220 Carc. 1B, H350
Specific concentration limits:			
Name	Product identifier	Specific concentration limits	
Tetrahydrofuran	(CAS-No.) 109-99-9 (EC-No.) 203-726-8 (EC Index-No.) 603-025-00-0	(C >= 25) STOT SE 3, H335 (C >= 25) Eye Irrit. 2, H319	

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.

Obritande finising. If eye initiation 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 respiratory irritation.

Symptoms/effects after skin contact : May cause moderate irritation, including burning sensation, tearing, redness or swelling.

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

Symptoms/effects after ingestion : Harmful if swallowed. May cause irritation to the digestive tract.

Chronic symptoms : May cause 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. Water spray. Carbon dioxide. Foam.

Unsuitable extinguishing media : Do not use a heavy water stream.

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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 bromide.

5.3. Advice for firefighters

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

combustible materials.

Firefighting instructions : Exercise caution when fighting any chemical fire. Use water spray or fog for cooling

exposed containers. 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 all safety precautions have been read and understood. Ventilate the

area thoroughly, especially low lying areas (basements, workpits etc). Keep away from

combustible materials.

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.

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. Store under nitrogen.

Incompatible products : Strong oxidizing agents. oxygen. Acids. Bases. Peroxides.

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

Storage temperature : 2 - 8 °C

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

smokina

Storage area : Keep away from combustible materials. Store in a dry place. Store in a closed container.

7.3. Specific end use(s)

For analytical purposes. Scientific research and development. Not for human consumption or veterinary purposes.

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SECTION 8: Exposure controls/personal protection

8.1. Control parameters

or it control parameters		
Tetrahydrofuran (109-99-9)		
United Kingdom	Local name	Tetrahydrofuran
United Kingdom	WEL TWA (mg/m³)	150 mg/m³
United Kingdom	WEL TWA (ppm)	50 ppm
United Kingdom	WEL STEL (mg/m³)	300 mg/m³
United Kingdom	WEL STEL (ppm)	100 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	Regulatory reference	EH40/2005 (Third edition, 2018). 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.

Materials for protective clothing:

Wear suitable protective clothing, gloves and eye/face protection

Hand protection:

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
Molecular mass : 106.95 g/mol
Colour : brown.

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Odour Codour threshold : No data available.

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

Flash point : -17 °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 : 0.927

Solubility : No data available
Log Pow : No data available
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.

10.5. Incompatible materials

Strong oxidizers. oxygen. Acids. Bases. Peroxides.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral) : Oral: Harmful if swallowed.

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

Vinyl bromide, 1M solution in THF (593-60-2)		
LD50 oral rat	500 mg/kg - Vinyl bromide	
LD50 dermal rabbit	>2000 - Tetrahydrofuran	
LC50 inhalation rat (mg/l)	53.9 mg/l/4h - Tetrahydrofuran	
ATE CLP (oral)	500 mg/kg bodyweight	
ATE CLP (vapours)	53.9 mg/l/4h	
ATE CLP (dust,mist)	53.9 mg/l/4h	

Tetrahydrofuran (109-99-9)	
LD50 oral rat	1650 mg/kg
LD50 dermal rat	> 2000 mg/kg
LC50 inhalation rat (mg/l)	14.7 mg/l 6h

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Vinyl Bromide (593-60-2)	
LD50 oral rat	500 mg/kg
Skin corrosion/irritation	: Not classified
Additional information	: Based on available data, the classification criteria are not met
Serious eye damage/irritation	: Causes serious eye irritation.
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	: May cause 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
STOT-single exposure	: May cause respiratory irritation.
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 symptoms	: Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

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12.1		OVI	CITY
14.		UAI	CILV

Hazardous to the aquatic environment, short-term

: Not classified

Hazardous to the aquatic environment, long-term

Tetrahydrofuran (109-99-9)

: Not classified

(chronic)

Vinyl bromide, 1M solution in THF (593-60-2)	
LC50 fish 1	2160 mg/l Pimephales promelas - 96 h - Tetrahydrofuran
LC50 fish 2	2820 mg/l Leuciscus idus - 48 h - Tetrahydrofuran
EC50 Daphnia 1	3485 mg/l Water flea - 48 h

LC50 fish 1 2160 mg/l Pimephales promelas (fathead marrow)	
EC50 Daphnia 1	382 mg/l 24h
12.2. Persistence and degradability	
Vinyl bromide, 1M solution in THF (593-60-2)	
Persistence and degradability	No data available.

Tetrahydrofuran (109-99-9)	
Persistence and degradability	Not biodegradable.

Vinyl Bromide (593-60-2)	
Persistence and degradability	No data available.
12.3. Bioaccumulative potential	
Vinyl bromide, 1M solution in THF (593-60-2)	
Bioaccumulative potential	No data available.

Tetrahydrofuran (109-99-9)	
Log Pow	0.46

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Bioaccumulative potential Not potentially bioaccumulable.

Vinyl Bromide (593-60-2)

Bioaccumulative potential No data available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Vinyl bromide, 1M solution in THF (593-60-2)

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

Component

		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
	Vinyl Bromide (593-60-2)	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.

: Avoid release to the environment. Ecology - waste materials

SECTION 14: Transport information
In accordance with ADR / RID / IMDG / IATA / ADN

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
1993	1993	1993	1993	1993
14.2. UN proper shippin	g name			
FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.	Flammable liquid, n.o.s.	FLAMMABLE LIQUID, N.O.S.	FLAMMABLE LIQUID, N.O.S.
Transport document description				
UN 1993 FLAMMABLE LIQUID, N.O.S. (Vinyl bromide, 1M solution in THF), 3, II, (D/E)	UN 1993 FLAMMABLE LIQUID, N.O.S. (Vinyl bromide, 1M solution in THF), 3, II	UN 1993 Flammable liquid, n.o.s. (Vinyl bromide, 1M solution in THF), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (Vinyl bromide, 1M solution in THF), 3, II	UN 1993 FLAMMABLE LIQUID, N.O.S. (Vinyl bromide, 1M solution in THF), 3, II
14.3. Transport hazard class(es)				
3	3	3	3	3
3	3	3	3	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 available				

No supplementary information available

14.6. Special precautions for user

Overland transport

Classification code (ADR) : F1

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Special provisions (ADR) : 274, 601, 640C

Limited quantities (ADR) : 11

Excepted quantities (ADR) : E2

Packing instructions (ADR) : P001

Mixed packing provisions (ADR) : MP19

Portable tank and bulk container instructions : T7

(ADR)

Portable tank and bulk container special provisions

(ADR)

: TP1, TP8, TP28

Tank code (ADR) : L1.5BN

Vehicle for tank carriage : FL

Transport category (ADR) : 2

Special provisions for carriage - Operation (ADR) : S2, S20

Hazard identification number (Kemler No.) : 33

Orange plates

33 1993

Tunnel restriction code (ADR) : D/E EAC code : •3YE

Transport by sea

Special provisions (IMDG) : 274

Limited quantities (IMDG) : 1 L

Excepted quantities (IMDG) : E2

Packing instructions (IMDG) : P001

IBC packing instructions (IMDG) : IBC02

Tank instructions (IMDG) : T7

Tank special provisions (IMDG) : TP1, TP28, TP8

EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-E
Stowage category (IMDG) : B

Air transport

PCA Excepted quantities (IATA) · F2 PCA Limited quantities (IATA) : Y341 PCA limited quantity max net quantity (IATA) : 1L PCA packing instructions (IATA) : 353 PCA max net quantity (IATA) : 5L CAO packing instructions (IATA) : 364 CAO max net quantity (IATA) : 60L Special provisions (IATA) : A3 ERG code (IATA) : 3H

Inland waterway transport

Classification code (ADN) : F1

Special provisions (ADN) : 274, 601, 640C

 Limited quantities (ADN)
 : 1 L

 Excepted quantities (ADN)
 : E2

 Carriage permitted (ADN)
 : T

 Equipment required (ADN)
 : PP, EX, A

Ventilation (ADN) : VE01

Number of blue cones/lights (ADN) : 1

Rail transport

Classification code (RID) : F1

Special provisions (RID) : 274, 601, 640C

Limited quantities (RID) : 1L

Excepted quantities (RID) : E2

Packing instructions (RID) : P001

Mixed packing provisions (RID) : MP19

Portable tank and bulk container instructions (RID) : T7

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Portable tank and bulk container special provisions : TP1, TP8, TP28

(RID)

Tank codes for RID tanks (RID) : L1.5BN

Transport category (RID) : 2

Colis express (express parcels) (RID) : CE7

Hazard identification number (RID) : 33

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

No additional information available

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. 1B	Carcinogenicity, Category 1B	
Carc. 2	Carcinogenicity, Category 2	
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2	
Flam. Gas 1	Flammable gases, Category 1	
Flam. Liq. 2	Flammable liquids, Category 2	
Press. Gas	Gases under pressure	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	
H220	Extremely flammable gas.	
H225	Highly flammable liquid and vapour.	
H302	Harmful if swallowed.	
H319	Causes serious eye irritation.	
H335	May cause respiratory irritation.	
H350	May cause cancer.	
H351	Suspected of causing cancer.	
EUH018	In use may form flammable/explosive vapour-air mixture.	
EUH019	May form explosive peroxides.	

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.