

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 Date of issue: 5/14/2020 Version: 1.0

	nce/mixture and of the company/undertaking
1.1. Product identifier Product form	: Mixture
Product name	: 4-Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether
EC-No.	: 627-087-3
CAS-No.	: 352-13-6
• • • • • • • • • • • • • • • • • • • •	
Product code	: 90027738
Formula	: C6H4BrFMg
Product group	: Blend
1.2. Relevant identified uses of the substant	ce 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	a sheet
Supplier	
Scafell Organics Molekula Ltd Lingfield Way Darlington - England T +44 (0) 3302 000 333 info@molekula.com / kevinbanks@molekula.com - w	ww.molekula.com
1.4. Emergency telephone number	
	+44 (0) 7769276927
SECTION 2: Hazards identification	
2.1. Classification of the substance or mixtu	ire
Classification according to Regulation (EC) No. 1	272/2008 [CLP]
Flammable liquids, Category 1	H224
Acute toxicity (oral), Category 4	H302
Skin corrosion/irritation, Category 1	H314
Specific target organ toxicity — Single exposure, Cat Full text of H statements : see section 16	tegory 3, Narcosis H336
Adverse physicochemical, human health and env	vironmental effects
No additional information available 2.2. Label elements	
Labelling according to Regulation (EC) No. 1272/ Hazard pictograms (CLP)	
	GHS02 GHS05 GHS07
Signal word (CLP)	: Danger
Hazard statements (CLP)	: H224 - Extremely flammable liquid and vapour. H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H336 - May cause drowsiness or dizziness

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

Precautionary statements (CLP)	 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. P303+P361+P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water /shower. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
EUH-statements	: EUH014 - Reacts violently with water. EUH019 - May form explosive peroxides.
2.3 Other hazarde	

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 OFOTION

SECTION 3: Composition/Informati 3.1. Substances Not applicable 3.2. Mixtures	on on ingredients		
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Diethyl Ether	(CAS-No.) 60-29-7 (EC-No.) 200-467-2 (EC Index-No.) 603-022-00-4	58 - 62	Flam. Liq. 1, H224 Acute Tox. 4 (Oral), H302 STOT SE 3, H336
4-Fluorophenylmagnesium Bromide	(CAS-No.) 352-13-6 (EC-No.) 627-087-3	38 - 42	Skin Corr. 1, 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 effe	cts, both acute and delayed
Symptoms/effects after inhalation	: Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Symptoms/effects after skin contact	: Causes severe burns. Blisters. Redness, pain.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Severe irritation or burns to the mouth, throat, oesophagus, and stomach.
A A Logit contraction of the second structure of the s	the state of the second state of the

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 5	,
5.2. Special hazards arising from the substa	
Fire hazard	: Flammable liquid and vapour. Reacts violently with water.
Explosion hazard	: May form flammable/explosive vapour-air mixture.
Hazardous decomposition products in case of fire	: Carbon oxides (CO, CO2). hydrogen bromide. hydrogen fluoride. Magnesium oxide fumes.
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. Prevent fire fighting water from entering the environment.

Safety Data Sheet

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 m	03511505
	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. N	lotify authorities if liquid enters sewers or public waters.
6.3. Methods and material for contain	
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. Reacts violently with water.
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 a	ny 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 contents under inert gas.
Incompatible products	: Strong oxidizing agents. Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources. open flames. sparks.
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 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.

SECTION 8: Exposure c 8.1. Control parameters	ontrols/personal protection	
Diethyl Ether (60-29-7)		
United Kingdom	Local name	Diethyl ether
United Kingdom	WEL TWA (mg/m³)	310 mg/m ³
United Kingdom	WEL TWA (ppm)	100 ppm

Safety Data Sheet

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

Diethyl Ether (60-29-7)				
United Kingdom	WEL STEL (mg/m³)	620 mg/m³		
United Kingdom WEL STEL (ppm) 200 ppm				
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 protecti	ve clothing:						
Wear suitable protectiv	ve clothing, gl	oves and eye	e/face protection				
Hand protection:							
The protective gloves	to be used mu	ust comply w	ith the specifications of	the regulation 2016/425 ar	nd the resul	tant standard	EN 374
Туре	Material		Permeation	Thickness (mm)	Penetratio	on	Standard
Disposable gloves	Fluoroelast (FKM)	omer	6 (> 480 minutes)	0.7			EN 374
Eye protection:							
Emergency eye wash to designed to protect ag			ble in the immediate vio	cinity of any potential expo	sure. Use e	ye protection :	according to EN 166,
Туре		Use		Characteristics Stat		Standard	
Safety goggles, Face s	ety goggles, Face shield Droplet, vapours		tightly fitting safety goggles, With side shields		EN 166	EN 166	
Skin and body protec	tion:						
Emergency safety sho clothing readily availab			n the immediate vicinity	of any potential exposure	. Keep suita	ble chemicall	y resistant protective
Type Standard							

Type 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 pr 9.1. Information on basic physical and ch	
Physical state	: Liquid
Colour	: No data available
Odour	: No data available.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: -40 °C
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available

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

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	: 1.043
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
0.2 Other information	

9.2. Other information No additional information available

SECTION 10: Stability and reactivity
10.1. Reactivity
Flammable liquid and vapour. Reacts violently with water.
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. Strong acids.
10.6. Hazardous decomposition products
No hazardous decomposition products known at room temperature. Thermal decomposition generates : Carbon oxides (CO, CO2). hydrogen
bromide. hydrogen fluoride. Magnesium oxide fumes.

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		
4-Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether (352-13-6)			
LD50 oral rat	1215 mg/kg Ethyl ether		
LD50 dermal rabbit	20 ml/kg Ethyl ether		
ATE CLP (oral)	1215 mg/kg bodyweight		
ATE CLP (dermal)	20000 mg/kg bodyweight		

Diethyl Ether (60-29-7)	
LD50 oral rat	1200 - 3560 mg/kg bodyweight
LC50 inhalation rat (ppm)	32000 ppm/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	: Not classified
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 drowsiness or dizziness.

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

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	
12.1. Toxicity	
Hazardous to the aquatic environment, short-term (acute)	: Not classified
Hazardous to the aquatic environment, long-term (chronic)	: Not classified
4-Fluorophenylmagnesium Bromide, 2M Sol	ution in Diethyl Ether (352-13-6)

LC50 fish 1	2560 mg/l Pimephales promelas - 96 h
EC50 Daphnia 1	165 mg/l Daphnia magna (Water flea)

Diethyl Ether (60-29-7)			
LC50 fish 1	2560 mg/l 96hr Pimephales promelas (fathead minnow)		
EC50 Daphnia 1	165 mg/l 24h		
EC50 72h algae (1)	100 mg/l 72h		
NOEC (chronic)	100 mg/l 21days		
12.2. Persistence and degradability			
4-Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether (352-13-6)			
Persistence and degradability	No data available.		

Diethyl Ether (60-29-7)		
Persistence and degradability Not biodegradable.		
12.3. Bioaccumulative potential		
4-Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether (352-13-6)		
Bioaccumulative potential No data available.		

Diethyl Ether (60-29-7)			
Log Pow	1.05 @20.C		
Bioaccumulative potential Not potentially bioaccumulable.			
12.4. Mobility in soil			
No additional information available			
12.5. Results of PBT and vPvB assessment			
4-Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether (352-13-6)			
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

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

ADR	IMDG	ΙΑΤΑ	ADN	RID
14.1. UN number				
2924	2924	2924	2924	2924
14.2. UN proper shipping	q name			
FLAMMABLE LIQUID, CORROSIVE, N.O.S.	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	Flammable liquid, corrosive, n.o.s.	FLAMMABLE LIQUID, CORROSIVE, N.O.S.	FLAMMABLE LIQUID, CORROSIVE, N.O.S.
Transport document descri		,	,	,
UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (4- Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether), 3 (8), I, (C/E)	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (4- Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether), 3 (8), I	UN 2924 Flammable liquid, corrosive, n.o.s. (4- Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether), 3 (8), I	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (4- Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether), 3 (8), I	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (4- Fluorophenylmagnesium Bromide, 2M Solution in Diethyl Ether), 3 (8), I
14.3. Transport hazard c	lass(es)			
3 (8)	3 (8)	3 (8)	3 (8)	3 (8)
14.4. Packing group				
I	I	I	I	I
14.5. Environmental haz	ards			
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)	: F			
Special provisions (ADR)	: 2 : 0	74		
Limited quantities (ADR)				
Excepted quantities (ADR)	: E			
Packing instructions (ADR)		2001		
Mixed packing provisions (AD Portable tank and bulk contair (ADR)		/IP7, MP17 14		
Portable tank and bulk contair (ADR)	ner special provisions :T	P2		
Tank code (ADR)	: L	10CH		
Tank special provisions (ADR)) :T	U14, TE21		
Vehicle for tank carriage	: F	Ľ		
Transport category (ADR)	: 1			
Special provisions for carriage		2, S20		
Hazard identification number (Kemler No.) : 3	38		
Orange plates	:	338 2924		
Tunnel restriction code (ADR)	: (2/E		
EAC code	: •3WE			
APP code		strie s(fl)		
Transport by sea		× /		
Special provisions (IMDG)	: 2	74		
Packing instructions (IMDG)	: F	2001		

Safety Data Sheet

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

according to Regulation (EC) No. 1907/2006 (REACH) with it	s amendment Regulation (EU) 2015/830	
Tank special provisions (IMDG)	: TP2	
EmS-No. (Fire)	: F-E	
EmS-No. (Spillage)	: S-C	
Stowage category (IMDG)	:E	
Stowage and handling (IMDG)	: SW2	
Properties and observations (IMDG)	: Causes burns to skin, eyes and mucous membranes.	
Air transport		
PCA Excepted quantities (IATA)	: E0	
PCA Limited quantities (IATA)	: Forbidden	
PCA limited quantity max net quantity (IATA)	: Forbidden	
PCA packing instructions (IATA)	: 350	
PCA max net quantity (IATA)	: 0.5L	
CAO packing instructions (IATA)	: 360	
CAO max net quantity (IATA)	: 2.5L	
Special provisions (IATA)	: A3, A803	
ERG code (IATA)	: 3CH	
Inland waterway transport		
Classification code (ADN)	: FC	
Special provisions (ADN)	: 274	
Limited quantities (ADN)	: 0	
Excepted quantities (ADN)	: E0	
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)	: FC	
Special provisions (RID)	: 274	
Limited quantities (RID)	: 0	
Excepted quantities (RID)	: E0	
Packing instructions (RID)	: P001	
Mixed packing provisions (RID)	: MP7, MP17	
Portable tank and bulk container instructions (RID)	: T14	
Portable tank and bulk container special provisions (RID)	: TP2	
Tank codes for RID tanks (RID)	: L10CH	
Special provisions for RID tanks (RID)	: TU14, TU38, TE21, TE22	
Transport category (RID)	:1	
Hazard identification number (RID)	: 338	
14.7. Transport in bulk according to Annex II of Marpol and the IBC Code		

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.

Safety Data Sheet

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

Other information	: None.
Full text of H- and EUH-statements:	
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Flam. Liq. 1	Flammable liquids, Category 1
Skin Corr. 1	Skin corrosion/irritation, Category 1
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Narcosis
H224	Extremely flammable liquid and vapour.
H302	Harmful if swallowed.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H336	May cause drowsiness or dizziness.
EUH014	Reacts violently with water.
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.