

Trimethyl phosphite Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 Date of issue: 3/11/2019 Version: 1.0

SECTION 1: Identification of the substa	nce/mixture and of the company/undertaking		
1.1. Product identifier			
Product form	: Substance		
Substance name	: Trimethyl phosphite		
IUPAC name	: Phosphorous acid, trimethyl ester		
EC-No.	: 204-471-5		
CAS-No.	: 121-45-9		
Product code	: 89967933		
Formula	: C3H9O3P		
Product group	: Raw material		
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		
1.2.2. Uses advised against			
No additional information available			
1.3. Details of the supplier of the safety data Scafell Organics Molekula Ltd Lingfield Way Darlington - England T +44 (0) 1949 823777 / +44 (0) 7590 545705 info@molekula.com / kbowen@molekula.com - www			
1.4. Emergency telephone number			
	+44 (0) 7590 545705		
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 3	H226		
Acute toxicity (oral), Category 4	H302		
Skin corrosion/irritation, Category 2	H315		
Serious eye damage/eye irritation, Category 1	H318		
Specific target organ toxicity — Single exposure, Category 3, H335 Respiratory tract irritation Full text of H statements : see section 16			
Adverse physicochemical, human health and env No additional information available 2.2. Label elements	rironmental effects		
Labelling according to Regulation (EC) No. 1272/ Hazard pictograms (CLP)	2008 [CLP] GHS02 GHS05 GHS07		
Signal word (CLP)	: Danger		
Hazard statements (CLP)	 H226 - Flammable liquid and vapour. H302 - Harmful if swallowed. H315 - Causes skin irritation. H318 - Causes serious eye damage. H335 - May cause respiratory irritation. 		
Precautionary statements (CLP)	 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing mist, spray, vapours. P280 - Wear protective clothing, eye protection, face protection, protective gloves. 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. 		

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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

SECTION 3: Composition/information on ingredients 3.1. Substances				
Name	Product identifier	%		
Trimethyl phosphite (CAS-No.) 121-45-9 (EC-No.) 204-471-5 100				
Full text of H-statements: see section 16	·			

3.2. Mixtures Not applicable

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. Do not leave affected person unattended. Never give anything by mouth to an unconscious person.
First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing. Give oxygen or artificial respiration if necessary. Get immediate 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. Get immediate medical advice/attention.
First-aid measures after eye contact	: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Remove contact lenses, if present and easy to do. Continue rinsing.
First-aid measures after ingestion	: Rinse mouth out with water. Get immediate medical advice/attention. Do not induce vomiting. Do not give an unconscious person anything to drink.
4.2. Most important symptoms and effects,	both acute and delayed
Symptoms/effects after inhalation	: Material is destructive to tissue of the mucuous membranes and upper respiratory tract. Cough, shortness of breath, headache, nausea. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
Symptoms/effects after skin contact	: May produce skin irritation, blistering, ulcers, and deep scarring. Causes severe burns.
Symptoms/effects after eye contact	: redness, itching, tears. Direct contact may result in corneal injury. Causes serious eye burns.
Symptoms/effects after ingestion	: Symptoms of ingestion include drowsiness, weakness, headache, dizziness, nausea, vomiting. Burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.
4.3. Indication of any immediate medical att	ention and special treatment needed

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	: Foam. Dry powder. Carbon dioxide. Sand.		
Unsuitable extinguishing media	: Do not use a heavy water stream.		
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). Phosphorus oxides.		
5.3. Advice for firefighters			
Precautionary measures fire	: Exposure to fire/heat: seal off low-lying areas. Keep container tightly closed and away from heat, sparks and flame. Keep away from combustible materials.		
Firefighting instructions	: Evacuate area. Eliminate all ignition sources if safe to do so. Fight fire from safe distance and protected location. Use water spray or fog for cooling exposed containers. Use extinguishing agent suitable for surrounding fire. Keep upwind.		
Protection during firefighting	: Use self-contained breathing apparatus and chemically protective clothing.		
Other information	: Warn all persons of toxic hazard.		

SECTION 6: Accidental release measur	es	
6.1. Personal precautions, protective equip	ment and emergency procedures	
General measures	: Remove ignition sources. Use special care to avoid static electric charges. No open flames. No smoking.	
6.1.1. For non-emergency personnel Protective equipment	: Wear recommended personal protective equipment.	

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Emergency procedures	: Do not touch or walk on the spilled product. Evacuate area. Mark out the contaminated area with signs and prevent access to unauthorized personnel. Do not breathe vapours. Do not get in eyes, on skin, or on clothing. Turn leaking containers leak-side up to prevent the escape of liquid.	
Measures in case of dust release	: Shelter from vapours by keeping upwind. 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	All equipment used when handling the product must be grounded. Cover spill with non combustible material, e.g.: sand/earth. Prevent from entering sewers, basements and workpits, or any place where its accumulation can be dangerous. Stop leak if safe to do	
6.2. Environmental precautions		
Prevent entry to sewers and public waters. Notify a	authorities if liquid enters sewers or public waters.	
6.3. Methods and material for containment	t and cleaning up	
For containment	: Collect leaking and spilled liquid in sealable containers as far as possible. Contain the spilled material by bunding.	

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

Methods for cleaning up

Collect spillage. Store away from other materials.

6.4. Reference to other sections See Heading 8. Exposure controls and personal protection.

OFOTION 7.	 		

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 contact with skin, eyes and clothing. Avoid formation of vapours. 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. Always wash hands after handling the product. Do not eat, drink or smoke when using this product.
7.2. Conditions for safe storage, including an	y incompatibilities
Technical measures	: Proper grounding procedures to avoid static electricity should be followed. Use explosion- proof electrical/ventilating/lighting equipment.
Storage conditions	: Keep only in the original container in a cool, well ventilated place away from : Direct sunlight, Heat sources. Moisture sensitive. Do not allow contact with water.
Incompatible products	: Strong bases. Strong oxidisers.
Incompatible materials	: Sources of ignition. Direct sunlight. Heat sources. 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 in fireproof place. Store in dry protected location to prevent any moisture contact. Store at ambient temperature.
7.3. Specific end use(s)	

No additional information available

SECTION 8: Exposure controls/personal protection			
8.1. Control paramet	ers		
Trimethyl phosphite (121-45-9)			
United Kingdom	WEL TWA (mg/m ³)	10 mg/m³ UK. EH40 WEL - Workplace Exposure Limits	
8.2. Exposure contro	ols		

Appropriate engineering controls:

Handle in accordance with good industrial hygiene and safety procedures. Ensure exposure is below occupational exposure limits (where available). Floors should be impervious, resistant to liquids and easy to clean.

Personal protective equipment:

Avoid all unnecessary exposure. Wear recommended personal protective equipment.

Hand protection:

The protective gloves to be used must comply with the specifications of the regulation 2016/425 and the resultant standard EN 374. Always wash hands after handling the product

Туре	Material	Permeation	Thickness (mm)	Penetration	Standard
Disposable gloves	Butyl rubber	6 (> 480 minutes)	0.3		EN 374

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Eye protection:

Chemical goggles or face shield. 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
Face shield, Safety goggles	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	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. Wear appropriate mask

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

Other information:

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

SECTION 9: Physical and chemical properties		
9.1. Information on basic physical and che		
Physical state	: Liquid	
Molecular mass	: 124.08 g/mol	
Colour	: Clear colourless-pale yellow.	
Odour	: No data available.	
Odour threshold	: No data available	
pH	: No data available	
Relative evaporation rate (butylacetate=1)	: No data available	
Melting point	: -78 °C lit.	
Freezing point	: No data available	
Boiling point	: 111 - 112 °C lit.	
Flash point	: 28 °C closed cup	
Auto-ignition temperature	: No data available	
Decomposition temperature	: No data available	
Flammability (solid, gas)	: No data available	
Vapour pressure	: 23 hPa a at 20 °C	
Relative vapour density at 20 °C	: No data available	
Relative density	: 1.052 g/mL at 25 °C	
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 The product is non-reactive under normal conditions of use, storage and transport. 10.2. Chemical stability

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

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10.3. Possibility of hazardous reactions

Stable under normal conditions of use.

10.4. Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Moisture. Water, humidity.

10.5. Incompatible materials

Oxidising agents. Strong bases.

10.6. Hazardous decomposition products

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

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
Trimethyl phosphite (121-45-9)	
LD50 oral rat	1600 mg/kg
LD50 dermal rat	2600 mg/kg
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
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 respiratory irritation.
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	: Harmful if swallowed.

SECTION 12: Ecological information		
12.1. Toxicity	Not classified	
Chronic aquatic toxicity :	Not classified	
12.2. Persistence and degradability		
Trimethyl phosphite (121-45-9)		
Persistence and degradability	No data available.	
12.3. Bioaccumulative potential		
Trimethyl phosphite (121-45-9)		
Bioaccumulative potential	No data available.	
12.4. Mobility in soil		
No additional information available		
12.5. Results of PBT and vPvB assessment		
Trimethyl phosphite (121-45-9)		
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.	

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SECTION 13: Disposal considerations	
13.1. Waste treatment methods	
Product/Packaging disposal recommendations	: Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.
Additional information	: Handle empty containers with care because residual vapours are flammable.
Ecology - waste materials	: Avoid release to the environment.

SECTION 14: Transport information

ADR	IMDG	IATA	ADN	RID
			ABN	TUD
14.1. UN number			1	1
2329	2329	2329	2329	2329
14.2. UN proper shipping	g name			
TRIMETHYL PHOSPHITE	TRIMETHYL PHOSPHITE	Trimethyl phosphite	TRIMETHYL PHOSPHITE	TRIMETHYL PHOSPHITE
Transport document descr	iption			
UN 2329 TRIMETHYL PHOSPHITE (Trimethyl phosphite), 3, III, (D/E)	UN 2329 TRIMETHYL PHOSPHITE (Trimethyl phosphite), 3, III (23°C c.c	UN 2329 Trimethyl phosphite (Trimethyl .) phosphite), 3, III	UN 2329 TRIMETHYL PHOSPHITE (Trimethyl phosphite), 3, III	UN 2329 TRIMETHYL PHOSPHITE (Trimethyl phosphite), 3, III
14.3. Transport hazard o	lass(es)			
3	3	3	3	3
3				3
14.4. Packing group				
III		III	111	III
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 informatio	n available			
14.6. Special precautions	s for user			
Overland transport				
Classification code (ADR)	: F	1		
_imited quantities (ADR)	: 5	il		
Excepted quantities (ADR)	: E	1		
Packing instructions (ADR)	: F	2001, IBC03, LP01, R001		
Vixed packing provisions (AD	R) : N	/IP19		
Portable tank and bulk contair (ADR)	ner instructions : 1	2		
Portable tank and bulk contair (ADR)	ner special provisions : 1	P1		
Tank code (ADR)	: L	GBF		
		Ľ		
Transport category (ADR)				
		/12		
		52		
Orange plates	(Kemler No.) : 3	30 2329		

: D/E

: 3Y

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	5 ()
Transport by sea	
Packing instructions (IMDG)	: P001, LP01
IBC packing instructions (IMDG)	: IBC03
Tank instructions (IMDG)	: T2
Tank special provisions (IMDG)	: TP1
EmS-No. (Fire)	: F-E
EmS-No. (Spillage)	: S-D
Stowage category (IMDG)	: A
Flash point (IMDG)	: 23°C c.c.
Properties and observations (IMDG)	: Colourless liquid. Flashpoint: 23°C c.c. Immiscible with water. Irritating to skin, eyes and mucous membranes.
Air transport	
PCA Excepted quantities (IATA)	: E1
PCA Limited quantities (IATA)	: Y344
PCA limited quantity max net quantity (IATA)	: 10L
PCA packing instructions (IATA)	: 355
PCA max net quantity (IATA)	: 60L
CAO packing instructions (IATA)	: 366
CAO max net quantity (IATA)	: 220L
ERG code (IATA)	: 3L
Inland waterway transport	
Classification code (ADN)	: F1
Limited quantities (ADN)	: 5 L
Excepted quantities (ADN)	: E1
Equipment required (ADN)	: PP, EX, A
Ventilation (ADN)	: VE01
Number of blue cones/lights (ADN)	: 0
Rail transport	
Classification code (RID)	: F1
Excepted quantities (RID)	: E1
Packing instructions (RID)	: P001, IBC03, LP01, R001
Mixed packing provisions (RID)	: MP19
Portable tank and bulk container instructions (RID)	: T2
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 30
14.7. Transport in bulk according to Annex	II of Marpol and the IBC Code
Not applicable	

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

No REACH Annex XVII restrictions Trimethyl phosphite is not on the REACH Candidate List Directive 2012/18/EU (SEVESO III)

15.1.2. National regulations

Germany

Reference to AwSV	: Water hazard class (WGK) 1, Slightly hazardous to water (Classification according to AwSV; ID No. 1234)
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	: The substance is not listed

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SZW-lijst van mutagene stoffen	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Borstvoeding	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Vruchtbaarheid	: The substance is not listed
NIET-limitatieve lijst van voor de voortplanting giftige stoffen – Ontwikkeling	: The substance is not listed
Denmark	
Class for fire hazard	: Class II-1
Store unit	: 5 liter
Classification remarks	: R10 <h226;h302;h315;h318;h335>; Emergency management guidelines for the storage of flammable liquids must be followed</h226;h302;h315;h318;h335>
Danish National Regulations	: Young people below the age of 18 years are not allowed to use the product
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 i	nformation
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:		
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4	
Eye Dam. 1	Serious eye damage/eye irritation, Category 1	
Flam. Liq. 3	Flammable liquids, Category 3	
Skin Irrit. 2	Skin corrosion/irritation, Category 2	
STOT SE 3	Specific target organ toxicity — Single exposure, Category 3, Respiratory tract irritation	
H226	Flammable liquid and vapour.	
H302	Harmful if swallowed.	
H315	Causes skin irritation.	
H318	Causes serious eye damage.	
H335	May cause respiratory irritation.	

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.