



# SAFETY DATA SHEET

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH) Annex II

## Twin

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Version 1

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H-01010 (27783) / 27783 / FSG 02188 H-2

## Section 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1. Product identifier

## Twin

Pure substance/mixture Mixture

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

Recommended Use Herbicide  
Uses advised against No information available

### 1.3. Details of the supplier of the safety data sheet

Supplier Address ADAMA Agricultural Solutions UK Ltd  
Unit 15, Thatcham Buisness Village Colthrop Way,  
Thatcham Berkshire RG19 4LW, UK : 01635 860555  
Fax: 01635 861555

For further information, please contact

Email address ukenquiries@adama.com

### 1.4. Emergency telephone number

Emergency Telephone National Chemical Emergency Centre (UK):  
Tel: 01865 407333 (24 hours)

## Section 2: HAZARD IDENTIFICATION

### 2.1 Classification of the substance or mixture

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

Aspiration hazard Category 1 - (H304)

Acute toxicity - Inhalation Category 4 - (H332)

(Dusts/Mists)

Hazardous to the Aquatic Category 2 - (H411)

Environment - Chronic Hazard

Classification according to Directive 67/548/EEC or 1999/45/EC

Full text of R-phrases: see section 16

Xn;R20 - Xn;R65 - N;R51-53

**2.2. Label elements****Labeling according to Regulation (EC) No. 1272/2008 [CLP]****Hazard pictograms****Signal word**

Danger

**Hazard Statements**

H304 - May be fatal if swallowed and enters airways  
 H332 - Harmful if inhaled  
 H411 - Toxic to aquatic life with long lasting effects

**Precautionary Statements**

P102 - Keep out of reach of children  
 P261 - Avoid breathing dust/fume/gas/mist/vapors/spray  
 P331 - Do NOT induce vomiting  
 P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing  
 P501 - Dispose of contents/ container to an approved waste disposal plant

**EU Specific Hazard Statements**

EUH401 - To avoid risks to human health and the environment, comply with the instructions for use

**Additional phrases for PPP**

SP1 - Do not contaminate water with the product or its container

**2.3. Other hazards**

No information available

**Section 3: COMPOSITION/INFORMATION ON INGREDIENTS****3.2 Mixture**

Chemical Name	Weight-%	CAS No	EC No	Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Classification according to 67/548/EEC	M-Factor	REACH Registration Number
Phenmedipham	7-12	13684-63-4	237-199-0	616-106-00-0	Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	N; R50-53	M=1 M=1	-
Ethofumesate	7-11	26225-79-6	247-525-3	607-314-00-2	Aquatic Chronic 2 (H411)	N; R51-53		-
Dodecylbenzene sulphonate-MEA salt	4-6	26836-07-7	248-024-2	-	Skin Irrit. 2 (H315) Eye Dam. 1 (H318)	Xi; R38-41		-
N,N-dimethyldecanamide	10-13	14433-76-2	238-405-1	-	Skin Irrit. 2 (H315) Eye Irrit. 2 (H319)	Xi; R36-38		01-21194850 27-36-0001
Acetophenone	52-58	98-86-2	202-708-7	-	Acute Tox. 4 (H302) Eye Irrit. 2 (H319) Asp. Tox. 1 (H304)	Xn; R22 Xi; R36 Xn; R65		01-21195331 69-37-0002

Full text of R-phrases: see section 16

Full text of H- and EUH-phrases: see section 16

## Section 4: FIRST AID MEASURES

### 4.1. Description of first aid measures

<b>General advice</b>	In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). First aider: Pay attention to self-protection!.
<b>Inhalation</b>	Call a physician or poison control center immediately. Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration.
<b>Skin Contact</b>	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Consult a physician if necessary.
<b>Eye contact</b>	Immediately flush with plenty of water. After initial flushing, remove any contact lenses and continue flushing for at least 15 minutes. Keep eye wide open while rinsing. If symptoms persist, call a physician.
<b>Ingestion</b>	If swallowed, do not induce vomiting: seek medical advice immediately and show this container or label. Rinse mouth. Drink plenty of water.
<b>Self-protection of the first aider</b>	Use personal protective equipment as required.

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

<b>Symptoms</b>	None known
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### 4.3. Indication of any immediate medical attention and special treatment needed

<b>Note to physicians</b>	Treat symptomatically.
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## Section 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing media

#### **Suitable Extinguishing Media**

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

#### **Unsuitable Extinguishing Media**

No information available.

### 5.2. Special hazards arising from the substance or mixture

No specific hazard known.

### 5.3. Advice for firefighters

In the event of fire, wear self-contained breathing apparatus

In the event of fire and/or explosion do not breathe fumes

## Section 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal precautions, protective equipment and emergency procedures

#### **Personal precautions**

Use personal protective equipment as required. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

#### **For emergency responders**

Use personal protection recommended in Section 8.

**6.2. Environmental precautions**

Prevent entry into waterways, sewers, basements or confined areas. Do not flush into surface water or sanitary sewer system. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

**6.3. Methods and material for containment and cleaning up****Methods for cleaning up**

Take up mechanically, placing in appropriate containers for disposal.

**6.4. Reference to other sections****Other Information**

See also section 8,13

**Section 7: HANDLING AND STORAGE****7.1. Precautions for safe handling****Advice on safe handling**

Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product. Use with local exhaust ventilation.

**General Hygiene Considerations**

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.

**7.2. Conditions for safe storage, including any incompatibilities****Storage Conditions**

Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labeled containers.

**7.3. Specific end use(s)****Risk Management Methods (RMM)**

The information required is contained in this Material Safety Data Sheet.

**Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION****8.1. Control parameters**

Chemical Name	European Union	United Kingdom	France	Spain	Germany
Acetophenone 98-86-2				TWA: 10 ppm TWA: 50 mg/m <sup>3</sup>	
Chemical Name	Italy	Portugal	Netherlands	Finland	Denmark
Acetophenone 98-86-2		TWA: 10 ppm		TWA: 5 ppm TWA: 25 mg/m <sup>3</sup>	TWA: 10 ppm TWA: 49 mg/m <sup>3</sup>
Chemical Name	Austria	Switzerland	Poland	Norway	Ireland
Acetophenone 98-86-2			NDSCh: 100 mg/m <sup>3</sup> TWA: 50 mg/m <sup>3</sup>		TWA: 10 ppm TWA: 49 mg/m <sup>3</sup>

**Derived No Effect Level (DNEL)** No information available

**Predicted No Effect Concentration (PNEC)** No information available.

**8.2. Exposure controls**

<b>Engineering Controls</b>	Ensure adequate ventilation, especially in confined areas.
<b>Personal protective equipment</b>	
<b>Eye/face protection</b>	Tight sealing safety goggles.
<b>Body Protection</b>	Suitable protective clothing, Apron, Gloves made of plastic or rubber, Rubber boots, Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
<b>General Hygiene Considerations</b>	When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Regular cleaning of equipment, work area and clothing is recommended.
<b>Environmental exposure controls</b>	Do not allow into any sewer, on the ground or into any body of water.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on basic physical and chemical properties

Property	Values	Method	Remarks
<b>Appearance</b>			
<b>Physical state</b>	: Liquid		
<b>Color</b>	: brown		
<b>Odor</b>	: Aromatic		
<b>Odor threshold</b>	: No data available		
<b>pH</b>	: 2.9 - 3.9	CIPAC MT 75	solution (1 %)
<b>Melting point/freezing point °C</b>	: ----		Not Applicable
<b>Boiling point/boiling range °C</b>	: No data available		
<b>Flash point °C</b>	: 83	EEC A.9	
<b>Evaporation rate</b>	: Not Applicable		
<b>Flammability (solid, gas)</b>	: Not applicable for liquids		
<b>Upper/lower flammability or explosive limits</b>	: No data available		
<b>Vapor pressure kPa</b>	: ----		Not Applicable
<b>Vapor density</b>	: No data available		
<b>Relative density</b>	: 1.0532	EEC A.3	g/ml, 20 °C
<b>Solubility(ies) mg/l</b>	: ----		Not Applicable
<b>Partition Coefficient (n-octanol/water) Log Pow</b>	:		See Section 12 for more information
<b>Autoignition temperature °C</b>	: 465	EEC A.15	
<b>Decomposition temperature °C</b>	: No data available		
<b>Kinematic viscosity mm<sup>2</sup>/s 40 °C</b>	: 6	OECD 114	
<b>Explosive properties</b>	: Not an explosive		
<b>Oxidizing properties</b>	: Not oxidizing		

### 9.2. Other information

<b>Bulk density g/ml</b>	: ----		Not Applicable
<b>Surface tension mN/m</b>	: ----		No data available
<b>Minimum ignition energy (MIE) mJ</b>	:		

## Section 10: STABILITY AND REACTIVITY

### 10.1. Reactivity

Not available.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

None under normal processing.

#### 10.4. Conditions to avoid

Heat, flames and sparks.

#### 10.5. Incompatible materials

No information available

#### 10.6. Hazardous decomposition products

### Section 11: TOXICOLOGY INFORMATION

#### 11.1. Information on toxicological effects

##### Acute toxicity

	<u>Values</u>	<u>Species</u>	<u>Method</u>	<u>Remarks</u>
Oral LD50 mg/kg	: > 2000	Rat	OECD 423	
Dermal LD50 mg/kg	: > 2000	Rat	OECD 402	
Inhalation LC50 mg/l/4h	: 2.37	Rat	OECD 403	
Skin corrosion/irritation	: Non-irritating to the skin	Rabbit	OECD 404	
Serious eye damage/eye irritation	: Not irritating to eyes	Rabbit	OECD 405	
Respiratory/skin sensitization	: Not a skin sensitizer	Guinea pig	OECD 406	

##### Chronic toxicity

##### Germ cell mutagenicity

###### Chemical Name

Phenmedipham : Not classified  
Ethofumesate : Not classified

##### Carcinogenicity

###### Chemical Name

Phenmedipham : Not Carcinogenic  
Ethofumesate : Not Carcinogenic

##### Reproductive toxicity

###### Chemical Name

Phenmedipham : Not toxic for the reproductive system  
Ethofumesate : Not toxic for the reproductive system

##### STOT - single exposure

###### Chemical Name

Phenmedipham : No data available  
Ethofumesate : No data available

##### STOT - repeated exposure

###### Chemical Name

Phenmedipham : No data available  
Ethofumesate : No data available

##### Aspiration hazard

###### Chemical Name

Phenmedipham : No data available  
Ethofumesate : No data available

### Section 12: ECOLOGICAL INFORMATION

#### 12.1. Toxicity

**Acute toxicity**

<b>Aquatic toxicity</b>	<u>Values</u>	<u>Species</u>	<u>Method</u>	<u>Remarks</u>
Fish 96-hour LC50 mg/l	: 14.1		OECD 203	
Crustacea 48-hour EC50 mg/l	: 10.1		OECD 202	
Algae 72-hour EC50 mg/l	: 3.27		OECD 201	
Other plants EC50 mg/l	:			No data available

**Terrestrial Toxicity****Birds Oral LD50 mg/kg****Chemical Name**

Phenmedipham	: > 2100	Mallard duck		
Ethofumesate	: > 2000		OECD 401	

**Bees Oral LD50 µg/bee****Chemical Name**

Phenmedipham	: > 100			
Ethofumesate	: > 50		OECD 213	

**12.2. Persistence and degradability****Abiotic Degradation****Water DT50 days****Chemical Name**

	<u>Values</u>	<u>Method</u>	<u>Remarks</u>
Phenmedipham	: 0.11 - 0.18		
Ethofumesate	: 105 - 242		

**Soil DT50 days****Chemical Name**

Phenmedipham	: 37		
Ethofumesate	: 47 - 211		

**Biodegradation****Chemical Name**

Phenmedipham	: Not readily biodegradable		
Ethofumesate	: Not readily biodegradable		

**12.3. Bioaccumulative potential****Partition Coefficient****(n-octanol/water) Log Pow****Chemical Name**

	<u>Values</u>	<u>Method</u>	<u>Remarks</u>
Phenmedipham	: 2.7		pH 6.4, 20-25 ° C
Ethofumesate	: 2.7		pH 6.4, 20-25 ° C

**Bioconcentration factor (BCF)****Chemical Name**

Phenmedipham	: 165		
Ethofumesate	: ----		No data available

**12.4. Mobility in soil****Adsorption/Desorption****Chemical Name**

	<u>Values</u>	<u>Method</u>	<u>Remarks</u>
Phenmedipham	: 888		Koc
Ethofumesate	: 147 - 132		Koc

**12.5. Results of PBT and vPvB assessment**

The components in this formulation do not meet the criteria for classification as PBT or vPvB

**12.6. Other adverse effects**

No information available.

**Section 13: DISPOSAL CONSIDERATIONS****13.1. Waste treatment methods**

<b>Waste from residues/unused products</b>	Disposal should be in accordance with applicable regional, national and local laws and regulations.
<b>Contaminated packaging</b>	Improper disposal or reuse of this container may be dangerous and illegal.
<b>Other Information</b>	Waste codes should be assigned by the user based on the application for which the product was used.

**Section 14: TRANSPORTATION INFORMATION****IMDG/IMO**

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. ( Phenmedipham )
<b>14.3 Hazard Class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Marine pollutant</b>	Yes
<b>14.6 Special precautions for user</b>	

**RID/ADR**

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. ( Phenmedipham )
<b>14.3 Hazard Class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Environmental hazard</b>	Yes
<b>14.6 Special precautions for user</b>	

**ICAO/IATA**

<b>14.1 UN/ID No</b>	3082
<b>14.2 Proper shipping name</b>	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. ( Phenmedipham )
<b>14.3 Hazard Class</b>	9
<b>14.4 Packing Group</b>	III
<b>14.5 Environmental hazard</b>	Yes
<b>14.6 Special precautions for user</b>	
<b>14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not Applicable

**Section 15: REGULATORY INFORMATION****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**



**15.2. Chemical safety assessment**

A chemical safety assessment according to regulation (EC) No. 1907/2006 is not required. A risk assessment was performed according to directive (EC) No. 91/414 or according to regulation (EC) No. 1107/2009.

**Section 16: OTHER INFORMATION****Full text of R-phrases referred to under sections 2 and 3**

R20 - Harmful by inhalation

R22 - Harmful if swallowed

R36 - Irritating to eyes

R38 - Irritating to skin

R41 - Risk of serious damage to eyes

R65 - Harmful: may cause lung damage if swallowed

R36/38 - Irritating to eyes and skin

R50/53 - Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

R51/53 - Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

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

H302 - Harmful if swallowed

H304 - May be fatal if swallowed and enters airways

H315 - Causes skin irritation

H318 - Causes serious eye damage

H319 - Causes serious eye irritation

H332 - Harmful if inhaled

H400 - Very toxic to aquatic life

H410 - Very toxic to aquatic life with long lasting effects

H411 - Toxic to aquatic life with long lasting effects

**Revision Note**

3.

**This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006**

**Disclaimer**

**The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.**

End of Safety Data Sheet