



## SAFETY DATA SHEET

### Havoc

Commission Regulation (EU) No 2015/830 of 28 May 2015.

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

##### 1.1. Product identifier

Product name Havoc

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

Identified uses Herbicide

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

Supplier Gemini Agriculture Limited  
71-75 Shelton Street  
Covent Garden  
London  
WC2H 9JQ  
+44 (0)20 30115515  
sales@geminiag.com

##### 1.4. Emergency telephone number

Emergency telephone +44 (0) 845 564 6959

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (EC 1272/2008)

Physical hazards Flam. Liq. 3 - H226

Health hazards Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1B - H317 STOT SE 3 - H336 Asp. Tox. 1 - H304

Environmental hazards Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410

##### 2.2. Label elements

###### Pictogram



Signal word

Danger

###### Hazard statements

H226 Flammable liquid and vapour.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H318 Causes serious eye damage.  
H336 May cause drowsiness or dizziness.  
H410 Very toxic to aquatic life with long lasting effects.

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<b>Precautionary statements</b>	<p>P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.</p> <p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P331 Do NOT induce vomiting.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P310 IF IN EYES: Immediately call a POISON CENTRE or doctor.</p> <p>P311 IF INHALED: Call a POISON CENTRE or doctor.</p> <p>P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p>P350 IF ON SKIN: Wash with plenty of soap and water.</p> <p>P501 Dispose of contents/container to a licensed hazardous-waste disposal contractor or collection site except for empty clean containers which can be disposed of as non-hazardous waste.</p>
<b>Supplemental label information</b>	EUH401 To avoid risks to human health and the environment, comply with the instructions for use.
<b>Contains</b>	Hydrocarbons, C10, aromatics, <1% naphthalene, Fluroxypyr-meptyl (ISO), Organic sulphonate surfactants 1 & 2

### 2.3. Other hazards

No information available.

## SECTION 3: Composition/information on ingredients

### 3.2. Mixtures

<b>Hydrocarbons, C10, aromatics, &lt;1% naphthalene</b>	<b>60-70%</b>
CAS number: —	EC number: 918-811-1
<b>Classification</b>	
STOT SE 3 - H336	
Asp. Tox. 1 - H304	
Aquatic Chronic 2 - H411	
<b>Fluroxypyr-meptyl (ISO)</b>	<b>25-50%</b>
CAS number: 81406-37-3	EC number: 279-752-9
M factor (Acute) = 1	M factor (Chronic) = 10
<b>Classification</b>	
Aquatic Acute 1 - H400	
Aquatic Chronic 1 - H410	
<b>Organic sulphonate surfactants 1 &amp; 2</b>	<b>5-10%</b>
CAS number: —	
<b>Classification</b>	
Skin Irrit. 2 - H315	
Eye Dam. 1 - H318	
STOT SE 3 - H336	
Aquatic Chronic 2 - H411	

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The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

<b>General information</b>	Remove affected person from source of contamination.
<b>Inhalation</b>	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if symptoms are severe or persist.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Get medical attention immediately. Do not induce vomiting.
<b>Skin contact</b>	Care should be taken to avoid contact with contaminants when removing contaminated clothing. Remove contaminated clothing immediately and wash skin with soap and water. Get medical attention if irritation persists after washing.
<b>Eye contact</b>	Rinse immediately with plenty of water. Remove contact lenses, if present and easy to do. Continue rinsing. Continue to rinse for at least 15 minutes. Get medical attention immediately.
<b>Protection of first aiders</b>	First aid personnel should wear appropriate protective equipment during any rescue. If it is suspected that airborne contaminants are still present around the affected person, first aid personnel should wear an appropriate respirator or self-contained breathing apparatus.

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

<b>Inhalation</b>	Headache. May cause drowsiness or dizziness. Aspiration hazard if swallowed. May cause lung damage or even death due to chemical pneumonia.
<b>Ingestion</b>	May be fatal if swallowed and enters airways.
<b>Skin contact</b>	Causes skin irritation. May cause an allergic skin reaction.
<b>Eye contact</b>	Causes serious eye damage. Causes severe burns.

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

<b>Notes for the doctor</b>	Treat symptomatically.
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### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

<b>Suitable extinguishing media</b>	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.

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

<b>Specific hazards</b>	Flammable liquid and vapour.
<b>Hazardous combustion products</b>	Chlorine. Oxides of carbon. Oxides of nitrogen. Hydrocarbons. Chlorine compounds.

#### 5.3. Advice for firefighters

<b>Protective actions during firefighting</b>	Fight fire from safe distance or protected location. In case of fire and/or explosion do not breathe fumes. Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Control run-off water by containing and keeping it out of sewers and watercourses. Contain and collect extinguishing water.
<b>Special protective equipment for firefighters</b>	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing. Firefighter's clothing conforming to European standard EN469 (including helmets, protective boots and gloves) will provide a basic level of protection for chemical incidents.

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### SECTION 6: Accidental release measures

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

**Personal precautions** May cause sensitisation or allergic reactions in sensitive individuals. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Evacuate area. Avoid contact with skin, eyes and clothing. Avoid the spillage or runoff entering drains, sewers or watercourses.

#### 6.2. Environmental precautions

**Environmental precautions** Very toxic to aquatic life with long lasting effects. Avoid release to the environment. Inform the relevant authorities if environmental pollution occurs (sewers, waterways, soil or air).

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

**Methods for cleaning up** Provide adequate ventilation. Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. Containers with collected spillage must be properly labelled with correct contents and hazard symbol. Residues and empty containers should be taken care of as hazardous waste according to local and national provisions.

#### 6.4. Reference to other sections

**Reference to other sections** For personal protection, see Section 8. For waste disposal, see Section 13.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

**Usage precautions** Persons susceptible to allergic reactions should not handle this product. Read label before use. Use only outdoors or in a well-ventilated area. Wear protective clothing as described in Section 8 of this safety data sheet. Provide adequate ventilation. Avoid contact with skin, eyes and clothing. Avoid inhalation of vapours and spray/mists. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating and lighting equipment. Use only non-sparking tools. Keep containers upright.

**Advice on general occupational hygiene** Persons susceptible to allergic reactions should not handle this product. Do not eat, drink or smoke when using this product. Eye wash facilities and emergency shower must be available when handling this product. Good personal hygiene procedures should be implemented. Wash promptly with soap and water if skin becomes contaminated. Remove contaminated clothing and protective equipment before entering eating areas. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Wash at the end of each work shift and before eating, smoking and using the toilet.

#### 7.2. Conditions for safe storage, including any incompatibilities

**Storage precautions** Prevent unauthorised access. Keep locked up and out of the reach of children. Store in tightly-closed, original container. Keep away from food, drink and animal feeding stuffs. Protect from frost. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid exposure to high temperatures or direct sunlight. Take precautionary measures against static discharges.

#### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

### SECTION 8: Exposure Controls/personal protection

#### 8.1. Control parameters

**Ingredient comments** No information available.

Hydrocarbons, C10, aromatics, <1% naphthalene

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### DNEL

Workers - Dermal; Long term systemic effects: 12.5 mg/kg/day  
 Workers - Inhalation; Long term systemic effects: 150 mg/m<sup>3</sup>  
 Consumer - Dermal; Long term systemic effects: 7.5 mg/kg/day  
 Consumer - Inhalation; Long term systemic effects: 32 mg/m<sup>3</sup>  
 Consumer - Oral; Long term systemic effects: 7.5 mg/kg/day

### 8.2. Exposure controls

#### Protective equipment



#### Personal protection

Protective clothing with long sleeves, waterproof and resistant to chemicals. Wear rubber boots.

#### Eye/face protection

Chemical splash goggles or face shield.

#### Hand protection

It is recommended that chemical-resistant, impervious gloves are worn. Wear protective gloves made of the following material: Nitrile rubber. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material.

#### Hygiene measures

Persons susceptible to allergic reactions should not handle this product. Good personal hygiene procedures should be implemented. Wash promptly with soap and water if skin becomes contaminated. Care should be taken to avoid contact with contaminants when removing contaminated clothing. Take off immediately all contaminated clothing. Remove contaminated clothing and protective equipment before entering eating areas. Wash at the end of each work shift and before eating, smoking and using the toilet. When using do not eat, drink or smoke. Eye wash facilities and emergency shower must be available when handling this product.

#### Respiratory protection

Wear a respirator fitted with the following cartridge: Organic vapour + dust and mist filter.

#### Environmental exposure controls

Avoid release to the environment. Very toxic to aquatic life with long lasting effects.

## SECTION 9: Physical and Chemical Properties

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

Appearance	Liquid.
Colour	Yellow.
Odour	Characteristic.
pH	pH (diluted solution): 5.3 (1%)
Flash point	56°C
Relative density	0.978 g/cm <sup>3</sup> @ 20°C
Auto-ignition temperature	>405°C
Viscosity	3.7 m <sup>2</sup> /s @ 20°C
Oxidising properties	Not oxidising.

### 9.2. Other information

Other information	No information available.
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## SECTION 10: Stability and reactivity

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### 10.1. Reactivity

**Reactivity** There are no known reactivity hazards associated with this product.

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Will not polymerise.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid heat, flames and other sources of ignition. Avoid exposure to high temperatures or direct sunlight. Protect from frost.

### 10.5. Incompatible materials

**Materials to avoid** Strong acids. Bases. Oxidising materials.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Chlorine. Oxides of nitrogen. Carbon monoxide (CO). Hydrocarbons.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**Notes (oral LD<sub>50</sub>)** No information available.

#### Acute toxicity - dermal

**Notes (dermal LD<sub>50</sub>)** No information available.

#### Acute toxicity - inhalation

**Notes (inhalation LC<sub>50</sub>)** No information available.

#### Skin corrosion/irritation

**Skin corrosion/irritation** Causes skin irritation.

#### Serious eye damage/irritation

**Serious eye damage/irritation** Causes serious eye damage.

#### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** Vapours may cause drowsiness and dizziness.

#### **Inhalation**

Headache. May cause drowsiness or dizziness. Aspiration hazard if swallowed. May cause lung damage or even death due to chemical pneumonia.

#### **Ingestion**

May be fatal if swallowed and enters airways.

#### **Skin contact**

Causes skin irritation. May cause an allergic skin reaction.

#### **Eye contact**

Causes serious eye damage. Causes severe burns.

#### Toxicological information on ingredients.

### Fluroxypyr-meptyl (ISO)

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### Acute toxicity - oral

Notes (oral LD<sub>50</sub>) LD<sub>50</sub> >2000 mg/kg, Oral, Rat

### Acute toxicity - dermal

Notes (dermal LD<sub>50</sub>) LD<sub>50</sub> >2000 mg/kg, Dermal, Rat

### Acute toxicity - inhalation

Notes (inhalation LC<sub>50</sub>) LC<sub>50</sub> >6.11 mg/l, 4 hours, Rat

## SECTION 12: Ecological Information

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

### 12.1. Toxicity

#### Ecological information on ingredients.

#### Fluroxypyr-meptyl (ISO)

##### Acute aquatic toxicity

LE(C)<sub>50</sub> 0.1 < L(E)C<sub>50</sub> ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC<sub>50</sub>, : >0.2 mg/l, Oncorhynchus mykiss (Rainbow trout)

Acute toxicity - aquatic invertebrates EC<sub>50</sub>, hours: >0.2 mg/l, Daphnia magna

Acute toxicity - aquatic plants LC<sub>50</sub>, : >0.5 mg/l, Scenedesmus subspicatus

##### Chronic aquatic toxicity

M factor (Chronic) 10

### 12.2. Persistence and degradability

**Persistence and degradability** No information available.

#### Ecological information on ingredients.

#### Fluroxypyr-meptyl (ISO)

**Biodegradation** Soil - DT<sub>50</sub> : 0.5-1.8 days

### 12.3. Bioaccumulative potential

#### Ecological information on ingredients.

#### Fluroxypyr-meptyl (ISO)

**Bioaccumulative potential** The product has low potential for bioaccumulation. BCF: <100,

### 12.4. Mobility in soil

#### Ecological information on ingredients.

#### Fluroxypyr-meptyl (ISO)

**Mobility** Immobile in soil.

### 12.5. Results of PBT and vPvB assessment

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**Results of PBT and vPvB assessment**      No information available.

### 12.6. Other adverse effects

**Other adverse effects**      No information available.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information**      Waste is classified as hazardous waste.

**Disposal methods**      Do not discharge into drains or watercourses or onto the ground. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

## SECTION 14: Transport information

### 14.1. UN number

<b>UN No. (ADR/RID)</b>	1993
<b>UN No. (IMDG)</b>	1993
<b>UN No. (ICAO)</b>	1993
<b>UN No. (ADN)</b>	1993

### 14.2. UN proper shipping name

<b>Proper shipping name (ADR/RID)</b>	FLAMMABLE LIQUID, N.O.S. (Aromatic hydrocarbon), pollutant
<b>Proper shipping name (IMDG)</b>	FLAMMABLE LIQUID, N.O.S. (Aromatic hydrocarbon), pollutant
<b>Proper shipping name (ICAO)</b>	FLAMMABLE LIQUID, N.O.S. (Aromatic hydrocarbon), pollutant
<b>Proper shipping name (ADN)</b>	FLAMMABLE LIQUID, N.O.S. (Aromatic hydrocarbon), pollutant

### 14.3. Transport hazard class(es)

<b>ADR/RID class</b>	3
<b>ADR/RID classification code</b>	F1
<b>ADR/RID label</b>	3
<b>IMDG class</b>	3
<b>ICAO class/division</b>	3
<b>ADN class</b>	3

### Transport labels



### 14.4. Packing group

<b>ADR/RID packing group</b>	III
<b>IMDG packing group</b>	III
<b>ADN packing group</b>	III
<b>ICAO packing group</b>	III



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### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



### 14.6. Special precautions for user

EmS	F-E, S-E
ADR transport category	3
Emergency Action Code	•3Y
Hazard Identification Number (ADR/RID)	30
Tunnel restriction code	(D/E)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

## SECTION 15: Regulatory information

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

<b>National regulations</b>	Control of Substances Hazardous to Health Regulations 2002 (as amended). Health and Safety at Work etc. Act 1974 (as amended). Control of Pollution Act 1974. Control of Pollution (Special Waste) Regulations 1980 (as amended). Fire Precautions Act 1971. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). 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 (as amended).
<b>EU legislation</b>	Commission Regulation (EU) No 2015/830 of 28 May 2015. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). 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 (as amended).
<b>Guidance</b>	The spraying of flammable liquids HSG178. Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

## SECTION 16: Other information

Revision comments	This is the first issue.
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<b>Issued by</b>	HS&E Manager.
<b>Revision date</b>	24/05/2018
<b>Revision</b>	1
<b>SDS number</b>	41264
<b>SDS status</b>	Approved.
<b>Hazard statements in full</b>	H226 Flammable liquid and vapour. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H336 May cause drowsiness or dizziness. 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.

This 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. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.