

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

1.1. Product identifier

Product name: CYREN

Product code: 7110-04A

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

Use of substance / mixture: Can be used as insecticide only.

1.3. Details of the supplier of the safety data sheet

Company name: Headland Agrochemicals

Rectors Lane

Pentre

Flintshire

CH5 2DH

United Kingdom

Tel: +44(0)1244 537370

Fax: +44(0)1244 532097

Email: flintshire.enquiry@fmc.com

1.4. Emergency telephone number

Emergency tel: +44(0)1244 537370

(office hours only)

Section 2: Hazards identification

2.1. Classification of the substance or mixture

Classification under CLP: Acute Tox. 3: H301; Asp. Tox. 1: H304; Eye Irrit. 2: H319; Acute Tox. 4: H332; Aquatic Chronic 1: H410; -: EUH066; -: EUH401

Most important adverse effects: Toxic if swallowed. May be fatal if swallowed and enters airways. Causes serious eye irritation. Harmful if inhaled. Very toxic to aquatic life with long lasting effects. Repeated exposure may cause skin dryness or cracking. To avoid risks to human health and the environment, comply with the instructions for use.

2.2. Label elements

Label elements:

Hazard statements: H301: Toxic if swallowed.

H304: May be fatal if swallowed and enters airways.

H319: Causes serious eye irritation.

H332: Harmful if inhaled.

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H410: Very toxic to aquatic life with long lasting effects.

EUH066: Repeated exposure may cause skin dryness or cracking.

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

Signal words: Danger

Hazard pictograms: * GHS06: Skull and crossbones

GHS07: Exclamation mark

GHS08: Health hazard

GHS09: Environmental



Precautionary statements: * P261: Avoid breathing vapours/spray.

P280: Wear eye/face protection.

P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310: Immediately call a POISON CENTER/doctor/physician.

P501: Dispose of contents/container to hazardous or special waste collection point.

2.3. Other hazards

PBT: This product is not identified as a PBT/vPvB substance.

Section 3: Composition/information on ingredients

3.2. Mixtures

Hazardous ingredients:

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE - REACH registered number(s): 01-2119463583-34-XXXX

EINECS	CAS	PBT / WEL	CLP Classification	Percent
918-811-1	-	-	Asp. Tox. 1: H304; STOT SE 3: H336; Aquatic Chronic 2: H411	50-70%

CHLORPYRIFOS

220-864-4	2921-88-2	-	Acute Tox. 3: H301; Aquatic Acute 1: H400; Aquatic Chronic 1: H410	30-50%
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CALCIUM DODECYLBENZENESULPHONATE

247-557-8	26264-06-2	-	Skin Irrit. 2: H315; Eye Dam. 1: H318; Aquatic Chronic 2: H411	1-10%
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2-ETHYLHEXAN-1-OL

203-234-3	104-76-7	-	Eye Irrit. 2: H319	<1%
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Section 4: First aid measures

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4.1. Description of first aid measures

- Skin contact:** Remove all contaminated clothes and footwear immediately unless stuck to skin. Wash immediately with plenty of soap and water. Consult a doctor if irritation develops.
- Eye contact:** Bathe the eye with running water for 15 minutes. Remove contact lenses, if present, after the first few minutes, then continue rinsing. Transfer to hospital for specialist examination.
- Ingestion:** Get medical attention immediately. Wash out mouth with water. Give 1 or 2 glasses of water or milk to drink. Induce vomiting only if: more than a mouthful has been ingested, patient is fully conscious, medical aid is not readily available and time since ingestion is less than one hour. Allow the exposed person to induce vomiting by touching the back of the throat with a finger. Ensure vomit does not enter airways. If vomiting does occur, rinse mouth and drink fluids again.
- Inhalation:** Remove casualty from exposure ensuring one's own safety whilst doing so. Light cases: Keep person under surveillance. Get medical attention immediately if symptoms develop. Serious cases: Get medical attention immediately or call for an ambulance. If breathing has stopped or become irregular, administer artificial respiration. Keep patient warm and at rest. Call a physician or Poison Control Centre immediately.

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

- Skin contact:** There may be irritation and redness at the site of contact. Repeated exposure may cause skin dryness and cracking.
- Eye contact:** There may be irritation and redness.
- Ingestion:** There may be soreness and redness of the mouth and throat. See Other Information for symptoms of cholinesterase inhibition.
- Inhalation:** There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

Delayed / immediate effects: No data available.

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

Immediate / special treatment: Show this safety data sheet to the doctor in attendance. Chlorpyrifos is a cholinesterase inhibitor, causing respiratory depression. The antidote, atropine sulphate, should be available at the workplace. If any signs of cholinesterase inhibition occur, seek medical attention immediately. Explain that the victim has been exposed to chlorpyrifos, an organophosphorus insecticide, and give details on the extent of exposure. Treatment: Initial decontamination, through whole body washing, gastric lavage and use of activated charcoal, is often required. If symptoms are present, immediately administer 2-4 mg of atropine sulphate intravenously or intramuscularly. Repeat at 5-10 minute intervals until signs of atropinisation appear and maintain full atropinisation until all organophosphate is metabolised. Obidoxime chloride (Toxogonin) or pralidoxime chloride (2-PAM), may be used as an adjunct to atropine sulphate. Treatment with oxime should be maintained as long as atropine sulphate is administered. At first sign of pulmonary oedema the patient

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should be given supplementary oxygen and treated symptomatically. Relapse can occur after initial improvement. Very close supervision of the patient is indicated for at least 48 hours, depending on the severity of poisoning. The product contains petroleum distillates which may pose an aspiration pneumonia hazard.

Section 5: Fire-fighting measures

5.1. Extinguishing media

Extinguishing media: Dry chemical or carbon dioxide for small fires, water spray or foam for large fires. Avoid heavy hose streams. Use water spray to cool containers.

5.2. Special hazards arising from the substance or mixture

Exposure hazards: In combustion emits toxic fumes. Essential breakdown products are hydrogen chloride, hydrogen sulphide, ethyl mercaptan, diethyl sulphide, nitrogen oxides, sulphur dioxide, carbon oxides, phosphorous pentoxide and various chlorinated organic compounds.

5.3. Advice for fire-fighters

Advice for fire-fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes. Approach fire from upwind to avoid hazardous vapours and toxic decomposition products. Fight fire from protected location or maximum possible distance. Dike area to prevent water run off.

Section 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions: * Do not attempt to take action without suitable protective clothing - see section 8 of SDS. Mark out the contaminated area with signs and prevent access to unauthorised personnel. Eliminate all sources of ignition. Avoid and reduce mist formation as much as possible. Turn leaking containers leak-side up to prevent the escape of liquid. If outside do not approach from downwind. If outside keep bystanders upwind and away from danger point. In the case of large spills (1 ton or more), alert the appropriate authorities.

6.2. Environmental precautions

Environmental precautions: Contain the spillage using bunding. Do not discharge into drains or rivers. Wash waters must be prevented from entering surface water drains. Accidental release into water courses must be alerted to the appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Clean-up procedures: Do not use equipment in clean-up procedure which may produce sparks. Surface water drains within close vicinity of the spill should be covered. Spills on the floor or other impervious surface should be absorbed onto an absorptive material such as hydrated lime, universal binder, or other absorbent clays. Collect the contaminated absorbent in suitable containers. Rinse the area with water and industrial detergent. Absorb wash

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liquid onto absorbent and transfer to suitable containers. Spills which soak into the ground should be dug up and placed in suitable containers. Spills in water should be contained as much as possible by isolation of the contaminated water. The contaminated water must be collected and removed for treatment or disposal. Refer to section 13 of SDS for suitable method of disposal.

6.4. Reference to other sections

Reference to other sections: Refer to section 8 of SDS. Refer to section 13 of SDS.

Section 7: Handling and storage

7.1. Precautions for safe handling

Handling requirements: Keep away from sources of ignition and protect from exposure to fire and heat. Avoid direct contact with the substance. Material should be handled by mechanical means as much as possible. Ensure there is sufficient ventilation of the area. Exhaust gases should be filtered or treated otherwise. For its use as a pesticide, look for precautions and personal protective measures on the officially approved label or other official guidance or policy in force. If these are lacking, see section 8 of this SDS. Keep unauthorised personnel away from working area. Remove contaminated clothing immediately. Wash gloves with soap and water before removing. Shower with soap and water after handling. Clean protective clothing and protective equipment with soap and water after use. Collect all wash water and dispose of as hazardous waste.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions: Protect from exposure to fire and heat. Keep away from sources of ignition. Keep away from direct sunlight. Keep container tightly closed. The storage room should be constructed of incombustible material, closed, dry, ventilated and with impermeable floor. The room should only be used for storage of chemicals, and without access to unauthorised persons or children. Food, drink, feed and seed should not be present. A warning sign reading 'POISON' is recommended. A hand wash station should be available.

7.3. Specific end use(s)

Specific end use(s): This product is a registered pesticide, which may only be used for the applications it is registered for, in accordance with a label approved by the regulatory authorities.

Section 8: Exposure controls/personal protection

8.1. Control parameters

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Hazardous ingredients:

CHLORPYRIFOS

Workplace exposure limits:

Respirable dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	0.2 mg/m ³	0.6 mg/m ³	-	-

DNEL/PNEC Values

Hazardous ingredients:

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE

Type	Exposure	Value	Population	Effect
DNEL	Dermal	12.5 mg/kg.bw/day	-	-
DNEL	Inhalation	150 mg/m ³	-	-

CHLORPYRIFOS

Type	Exposure	Value	Population	Effect
DNEL	-	0.01 mg/kg.bw/day	-	Systemic
PNEC	Aquatic environment	14 ng/l	-	-

8.2. Exposure controls

Engineering measures: When used in a closed system, personal protection equipment will not be required. The following is meant for other situations, when the use of a closed system is not possible, or when it is necessary to open the system. Consider the need to render equipment or piping system non-hazardous before opening.

Respiratory protection: In the event of a discharge of the material which produces a heavy vapour or mist, workers must put on officially approved respiratory protection equipment with a universal filter type including particle filter.

Hand protection: Wear chemical resistant gloves, such as barrier laminate, butyl rubber or nitrile rubber. The breakthrough times of these materials for the product are unknown. Replace gloves frequently and limit work done manually.

Eye protection: Safety glasses with side-shields. Ensure eye bath is to hand.

Skin protection: Waterproof pants and apron of chemical resistant material or coveralls with polyethylene (PE) coating will be sufficient for short time exposure. Coveralls must be discarded after use if contaminated. In cases of prolonged exposure, barrier laminate coveralls may be required.

Environmental: Refer to specific Member State legislation for requirements under Community environmental legislation.

Section 9: Physical and chemical properties

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9.1. Information on basic physical and chemical properties

State: Liquid

Colour: Yellow-brown

Odour: Aromatic

Oxidising: Non-oxidising (by EC criteria)

Solubility in water: Emulsifiable in water

Boiling point/range°C: Decomposes

Melting point/range°C: <0

Flash point°C: 70

Part.coeff. n-octanol/water: See section 12.3

Relative density: 1.083 g/ml at 20°C

9.2. Other information

Other information: Surface tension: Approx. 33 mN/m at 25°C.

Section 10: Stability and reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport or storage conditions.

10.2. Chemical stability

Chemical stability: Chlorpyrifos will decompose rapidly when heated to temperatures above 160°C, significantly increasing the risk of explosion. Direct local heating of the product such as electric heating or by steam must be avoided. Decomposition is dependent on time as well as temperature due to self-accelerating exothermic and autocatalytic reactions. These involve rearrangements and polymerisation, which release volatile compounds such as diethyl sulphide and ethyl mercaptan.

10.3. Possibility of hazardous reactions

Hazardous reactions: No data available.

10.4. Conditions to avoid

Conditions to avoid: Heat.

10.5. Incompatible materials

Materials to avoid: Strong bases. Strong oxidising agents. Can corrode metals (but does not meet the criteria for classification).

10.6. Hazardous decomposition products

Haz. decomp. products: In combustion emits toxic fumes. See subsection 5.2.

Section 11: Toxicological information

11.1. Information on toxicological effects

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Toxicity values:

Route	Species	Test	Value	Units
INHALATION	RAT	4H LC50	2.16	mg/l
DERMAL	RAT	LD50	>4000	mg/kg
ORAL	RAT	LD50	205	mg/kg

Hazardous ingredients:

HYDROCARBONS, C10, AROMATICS, <1% NAPHTHALENE

DERMAL	RAT	LD50	>2000	mg/kg
INHALATION	RAT	4H LC50	>4.7	mg/l
ORAL	RAT	LD50	>5000	mg/kg

CHLORPYRIFOS

DERMAL	RAT	LD50	>2000	mg/kg
ORAL	RAT (f)	LD50	350	mg/kg
ORAL	RAT (m)	LD50	276	mg/kg

CALCIUM DODECYLBENZENESULPHONATE

ORAL	RAT	LD50	4000	mg/kg
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2-ETHYLHEXAN-1-OL

DERMAL	RAT	LD50	>3000	mg/kg
INHALATION	RAT	4H LC50	0.89 - 5.3	mg/l
ORAL	RAT	LD50	3290	mg/kg

Relevant hazards for substance:

Hazard	Route	Basis
Acute toxicity (ac. tox. 4)	INH	Hazardous: calculated
Acute toxicity (ac. tox. 3)	ING	Hazardous: calculated
Serious eye damage/irritation	OPT	Hazardous: calculated
Aspiration hazard	-	Hazardous: calculated

Symptoms / routes of exposure

Skin contact: There may be irritation and redness at the site of contact. Repeated exposure may cause skin dryness and cracking.

Eye contact: There may be irritation and redness.

Ingestion: There may be soreness and redness of the mouth and throat. See Other Information for symptoms of cholinesterase inhibition.

Inhalation: There may be irritation of the throat with a feeling of tightness in the chest. Exposure may cause coughing or wheezing.

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Delayed / immediate effects: No data available.

Other information: Symptoms of cholinesterase inhibition: nausea, headache, vomiting, cramps, weakness, blurred vision, pin-point pupils, tightness in chest, laboured breathing, nervousness, sweating, watering eyes, drooling/frothing of mouth and nose, muscle spasms, coma.

Section 12: Ecological information

12.1. Toxicity

Ecotoxicity values:

Species	Test	Value	Units
BOBWHITE QUAIL (<i>Colinus virginianus</i>)	LD50	83	mg/kg
EARTHWORM (<i>Eisenia foetida</i>)	14d LC50	360	mg/kg.soil
ALGAE (<i>Selenastrum capricornutum</i>)	72H IC50	0.14	mg/l
DAPHNIA (<i>Daphnia magna</i>)	48H EC50	2.6	µg/l
RAINBOW TROUT (<i>Oncorhynchus mykiss</i>)	96H LC50	48	µg/l

Hazardous ingredients:

CHLORPYRIFOS

HONEYBEE (<i>Apis mellifera</i>)	LD50 contact	0.070	µg/bee
HONEYBEE (<i>Apis mellifera</i>)	LD50 oral	0.36	µg/bee

12.2. Persistence and degradability

Persistence and degradability: Chlorpyrifos is biodegradable, but does not meet the criteria for being readily biodegradable. It undergoes degradation in the environment and in waste water treatment plants. No adverse effects are found at concentrations up to 100 mg/l in waste water treatment plants. Degradation occurs both aerobically and anaerobically, biologically as well as abiotically. Degradation half-lives of chlorpyrifos vary with circumstances, but are usually around 4-10 weeks in soil and water. Degradation will increase at higher pH. Aromatic hydrocarbons are not readily biodegradable. However, they are expected to be degraded in the environment at a moderate rate. The product contains minor amounts of not readily biodegradable ingredients, which may not be degradable in waste water treatment plants.

12.3. Bioaccumulative potential

Bioaccumulative potential: Chlorpyrifos partition coefficient: log Kow = 4.7. Chlorpyrifos has the potential to bioaccumulate, but is rapidly excreted (with half-life 2-3 days). The bioaccumulation factor of chlorpyrifos is measured to be 1375 for whole fish (rainbow trout). Aromatic hydrocarbons partition coefficient: some of the main components have log Kow = 4.1 at 25°C by model calculation. Aromatic hydrocarbons have a moderate potential to bioaccumulate if continuous exposure is maintained. Most components can be

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metabolised by many organisms. Bioaccumulation factors of some of the main components are 715 - 810 by model calculation.

12.4. Mobility in soil

Mobility: Chlorpyrifos is not mobile in the environment, but is strongly absorbed to soil. Aromatic hydrocarbons are not mobile in the environment, but are highly volatile and will rapidly evaporate to the air if released into water or on to the surface of soil. They float and can migrate to sediment.

12.5. Results of PBT and vPvB assessment

PBT identification: This product is not identified as a PBT/vPvB substance.

12.6. Other adverse effects

Other adverse effects: No data available.

Section 13: Disposal considerations

13.1. Waste treatment methods

Disposal operations: Waste that cannot be reused or chemically reprocessed can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems. Chlorpyrifos is rapidly hydrolysed at pH >8.0.

Waste code number: 02 01 08

Disposal of packaging: Triple rinse (or equivalent) and offer for recycling or reconditioning. Do not discharge cleaning water to sewer systems. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials. Alternatively, packaging can be delivered to a licensed service for disposal of hazardous waste.

NB: The user's attention is drawn to the possible existence of regional or national regulations regarding disposal.

Section 14: Transport information

14.1. UN number

UN number: UN3018

14.2. UN proper shipping name

Shipping name: ORGANOPHOSPHORUS PESTICIDE, LIQUID, TOXIC
(CHLORPYRIFOS)

14.3. Transport hazard class(es)

Transport class: 6.1

14.4. Packing group

Packing group: III

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14.5. Environmental hazards

Environmentally hazardous: Yes

Marine pollutant: Yes

14.6. Special precautions for user

Special precautions: Do not discharge to the environment.

Tunnel code: E

Transport category: 2

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Transport in bulk: The product is not transported in bulk tankers.

Section 15: Regulatory information

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

Specific regulations: This product is a Seveso category/named substance in Annex I of Council Directive 96/82/EC. Workers under the age of 18 are not permitted to work with the product. All ingredients in this product are covered by EU chemical legislation. Product Registration Number: MAPP 11028.

15.2. Chemical Safety Assessment

Chemical safety assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.

Section 16: Other information

Other information

Other information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010.

* indicates text in the SDS which has changed since the last revision.

Phrases used in s.2 and s.3: EUH066: Repeated exposure may cause skin dryness or cracking.
EUH401: To avoid risks to human health and the environment, comply with the instructions for use.
H301: Toxic 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.
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.

Legal disclaimer: The above information is believed to be correct but does not purport to be all inclusive

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and shall be used only as a guide. This company shall not be held liable for any damage resulting from handling or from contact with the above product.