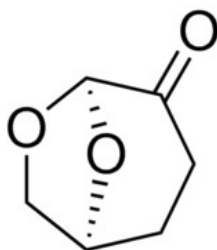


**CYRENE**

Version No. 013.3, Revision Date 25.01.2022

**SECTION 1 - IDENTIFICATION****1.1 Product Identifiers****Product Name** : **Cyrene****CAS Number** : **53716-82-8****EC Number** : **807-130-4****1.2 Other means of identification** : **Dihydrolevoglucosenone****(1S,5R)-6,8-Dioxabicyclo[3.2.1]octan-4-one****1.2 Recommended use of chemical and restrictions on use**

This substance is used in the following products: laboratory chemicals and pharmaceuticals.

This substance is used in the following areas: health services [SU20] and scientific research and development [SU24].

This substance is used for the manufacture of: fine chemicals [SU9] and pharmaceuticals [PC29].

This substance is used in the following activities or processes at workplace: transfer of chemicals, closed processes with no likelihood of exposure, closed, continuous processes with occasional controlled exposure, closed batch processing in synthesis or formulation, batch processing in synthesis or formulation with opportunity for exposure, mixing in open batch processes, transfer of substance into small containers and laboratory work.

Substance currently mainly used in scientific research and development. Currently no restrictions on use.

**1.3 Details of manufacturer or importer/exporter****Company** : **CIRCA GROUP PTY LTD****Address** : Building 404, Bio21 Institute, University of Melbourne,  
30 Flemington Road, Parkville, Victoria 3010, AUSTRALI**Telephone** : **+61 (0) 419 303 117****Email** : [info@circa-group.com](mailto:info@circa-group.com)**1.4 Emergency Telephone Number****Emergency Telephone** : **+61 (0) 428 047 874**



## CYRENE

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## SECTION 2 - HAZARDS IDENTIFICATION

2.1 CLP/GHS Classification : Causes serious eye irritation (Category 2)

2.2 CLP/GHS Label elements and precautionary statements



Pictogram :

Signal Word : **WARNING**

Hazard Statement : Causes serious eye irritation (H319)

Precautionary Statements : **PREVENTION**

P262 Do not get in eyes, on skin, or on clothing

P264 Wash skin thoroughly after handling/contact

P280 Wear protective gloves and eye protection/face protection

**RESPONSE**

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313 If eye irritation persists, get medical advice/attention

P332 + P313 If skin irritation occurs, get medical advice/attention

2.3 OTHER HAZARDS

Testing has confirmed that Cyrene is not a Class 3 Flammable liquid.Testing has confirmed that Cyrene is not a Class 8 Corrosive substance.

## SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substance

CYRENE Formula:  $C_6H_8O_3$  Molecular Weight: **128.13 g/mol**

CAS Number Concentration\* Chemical Name

53716-82-8  $\geq 98.5\%$  (1S,5R)-6,8-dioxacyclo[3.2.1]octan-4-one

*\*This specification is for Cyrene produced at our Boyer Demonstration plant. If you are looking for higher purity Cyrene, please contact us to discuss.*



## CYRENE

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### SECTION 4 - FIRST AID MEASURES

#### 4.1 Description of first aid measures

<b>General Information</b>	:	Get medical attention if symptoms severe or persistent. Show this Safety Data Sheet to medical personnel.
<b>Inhalation</b>	:	If breathed in, move person to fresh air. If not breathing, give artificial respiration. If symptoms severe or persistent, seek medical attention.
<b>Ingestion</b>	:	If swallowed, rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not induce vomiting. If symptoms severe or persistent, seek medical attention.
<b>Skin Contact</b>	:	Remove all contaminated clothing. Wash affected areas with soap and large amounts of water for at least 15 minutes. If symptoms severe or persistent, seek medical attention.
<b>Eye Contact</b>	:	Rinse eye(s) with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing for 15 minutes. <b>SEEK MEDICAL ATTENTION AS CYRENE IS KNOWN TO BE AN EYE IRRITANT.</b>
<b>Protection of First-Aiders</b>	:	No specific precautions. First aid personnel should wear appropriate protective clothing and equipment.

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

Cyrene can cause eye irritation. No data on human exposures in industrial settings available.

<b>General Information</b>	:	The severity of symptoms described may vary depending on the concentration and length of exposure.
<b>Inhalation</b>	:	Slightly dangerous.
<b>Ingestion</b>	:	Slightly dangerous.
<b>Skin Contact</b>	:	May cause irritation. Symptoms may be delayed.
<b>Eye Contact</b>	:	Causes eye irritation. Symptoms may be delayed.

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

None specified. Treat symptomatically.

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**SECTION 5 - FIRE FIGHTING MEASURES****5.1 Suitable extinguishing equipment:**

In the event of a fire use water spray or jet, dry chemical, alcohol-resistant foam or carbon dioxide.

**Unsuitable extinguishing equipment:** None specified. No data available.

**5.2 Specific hazards arising from the substance**

Potentially hazardous combustion products arising from the products of incomplete combustion (a variety of organic compounds) and carbon monoxide.

The potentially hazardous products formed are dependent on combustion temperature and availability of combustion air. A clean burning fire with little or no smoke will generate fewer hazardous combustion products than a fire generating significant dark smoke and odours.

Efficient combustion of Cyrene will generate only carbon dioxide and water.

**5.3 Advice for fire fighters*****Protective actions during firefighting:***

Avoid breathing emissions of smoke and vapours. Evacuate upwind. Fight fire from upwind. Cool plant and equipment, and containers exposed to heat with water sprays and remove product from fire area if this can be done without risk. Keep adjacent exposures cool with water sprays. Control firewater runoff. Avoid discharges to the aquatic environment.

***Protective equipment during firefighting:***

If exposure to smoke and vapours is possible wear positive-pressure self-contained breathing apparatus and appropriate protective clothing (including helmets, boots, gloves, etc.)

**HAZCHEM CODE: 2ZE**

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**SECTION 6 - ACCIDENTAL RELEASE MEASURES****6.1 Personnel precautions, protective equipment and emergency procedures****Non-Emergency Personnel**

Wear protective clothing as described in Section 8 of this SDS. No action shall be taken without appropriate training or involving any personnel risk. Prevent further leakage or spillage if safe to do so. If necessary, temporarily seal off nearby stormwater drains. Avoid breathing vapours. Avoid spilled material. Ensure adequate ventilation. If not, move to fresh air.

**Emergency Responders**

Prevent further leakage or spillage if safe to do so. If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained responders fitted with positive-pressure self-contained breathing apparatus and appropriate protective clothing (including helmets, boots, gloves, etc.) to engage in emergency management and clean-up.

**6.2 Environmental precautions**

Wherever possible, contain and collect spillage. Avoid discharge to aquatic systems and land.

Do not discharge or wash down to stormwater or sewage systems.

Where off-site discharge to land or water occurs immediately contact local environmental regulator.

Manage any wastes produced during clean-up in accordance with applicable environmental regulatory requirements.

**6.3 Methods and materials for containment and clean-up**

Absorb on sand, vermiculite, diatomaceous earth or any inert absorbent material and place in suitable container and seal. Store container outside in a secure area for disposal. Contact and arrange disposal by an approved waste transportation and disposal company.

Where waste product is regulated by EPA the Waste Generator must complete Part A of a Waste Transport Certificate provided by the waste transporter, and send one copy to EPA and retain the other. Alternatively, an electronic version of this requirement may be available.

**6.4 Reference to other sections**

The following sections are also relevant in dealing with accidental release scenarios:

- Section 8 Personal Protection and Exposure
- Section 11 Toxicological Information
- Section 12 Ecological Information
- Section 13 Disposal Considerations

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**SECTION 7 - HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Wear suitable gloves and eye/face protection.

Promptly wash if in contact with skin. Take off any contaminated clothing and wash before reuse.

Avoid inhalation of vapours or mists. Wear respiratory protection, if required.

Ensure adequate ventilation of stores and work areas.

Substance should only be handled by persons suitably qualified and competent in handling potentially hazardous substances.

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

Store in a tightly closed container in a cool, dry, and well ventilated bunded area.

Keep containers upright. Protect containers from damage.

The product is combustible. Do not store with Class 5 Oxidising Substances.

The product will react with strong acids and alkalis. Do not store with Class 8 substances.

**SECTION 8 - EXPOSURE CONTROLS AND PERSONAL PROTECTION**

**Note:** The full toxicological and physiological properties of Cyrene are not currently known so a **precautionary approach should be adopted** with respect to chemical hygiene and personal protection from exposure.

**8.1 Occupational exposure limits**

No occupational exposure limits have been published in any jurisdiction.

An occupational exposure limit will be derived when sufficient toxicological information on this substance becomes available.

**8.2 Exposure control measures****Engineering control measures:**

Handle and process material in enclosed systems, wherever possible.

Vent any discharges externally to atmosphere, wherever possible.

Ensure adequate workplace ventilation.

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**SECTION 8 - - - - -****CONTINUED****Personal protection measures:****Eye/Face protection**

Wear safety glasses/goggles with side shields when handling small quantities and full face shields when handling larger quantities.

Protection should be compliant with *AS/NZS 1337: Occupational eye and face protection* (Australia/New Zealand) or for UK/EC the relevant ISO or EN standard (e.g. EN 166).

**Skin/Hand protection**

Wear protective gloves made of neoprene, nitrile or butyl rubber . Inspect gloves for damage prior to use. Use proper glove removal technique (without touching gloves outer surface) to avoid contact with product.

Protection should be compliant with *AS/NZS 2161.10.3:2005, Occupational Protective Gloves Part 10: Protective gloves against chemicals and micro-organisms - Determination of resistance to permeation by chemicals* (Australia/New Zealand), or for UK/EC the relevant ISO or EN standard (e.g. EN 374-3:2003).

**Skin/Body protection**

Wear impervious clothing when handling liquid Cyrene. The level of body protection from protective clothing will be dependent on the potential for exposure to the material. PVC aprons or splash suits may be warranted in particular applications. Protection should be compliant with *AS/NZS 4501.1:2008: Occupational protective clothing—Guidelines on the selection, use, care and maintenance of protective clothing*; and *AS/NZS 4501.2:2006: Occupational protective clothing—General requirements*; or for UK/EC the relevant ISO or EN standard (e.g. ISO 16602:2007).

**Respiratory protection:**

Cyrene has a low vapour pressure and respiratory protection will not generally be required when handling under ambient conditions.

In the laboratory small quantities should be handled in a fume cupboard.



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## SECTION 8 - - - - -

CONTINUED

**Respiratory protection:**

For large quantities, or handling at elevated temperatures, or where a risk assessment shows that respiratory protection is appropriate, use a full face respirator with combination cartridge(s) for particulates, acid gases and organic vapours. Use approved respirators and cartridges.

Protection should be compliant with *AS/NZS 1715:2009: Selection, use and maintenance of respiratory protective equipment* (Australia/New Zealand), or for UK/EC the relevant ISO or EN standard.

## SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

<b>Nature/Appearance</b>	: Bio-based dipolar aprotic organic solvent. Clear to pale yellow liquid at room temperature.
<b>Odour</b>	: Slight smoky ketonic odour, can be lachrymatory at high concentrations.
<b>pH</b>	: <b>2.94</b> (10% solution in water)
<b>Melting Point</b>	: <b>&lt;-20 °C</b> (at 101.3 kPa)
<b>Boiling Point</b>	: <b>227 °C</b> (at 100.7 kPa, extrapolated, decomposes below this temp)
<b>Flash Point</b>	: <b>108 °C</b> (closed cup, ASTM D93/A.9. EG method, 1_atm)
<b>Fire Point</b>	: <b>118 °C</b> (open cup, ASTM D92, 1 atm)
<b>Auto-ignition Temp</b>	: <b>296 °C</b> (EU/EG Method A.15)
<b>Decomposition Temp</b>	: <b>&gt;200 °C</b> (very strong exothermic decomposition)
<b>Flammability</b>	: Not classified as a flammable liquid. Not flammable on contact with water. +
<b>LEL - UEL</b>	: <b>Not applicable</b>
<b>Vapour Pressure</b>	: <b>0.028 kPa</b> at 25 °C (Very low under ambient conditions) :
<b>Vapour Density</b>	No data available
<b>Liquid Density</b>	: <b>1.25 g/cm<sup>3</sup></b> (at 20 °C)
<b>Solubility</b>	: Completely miscible in water (hydrates to form a gem-diol; reversible) : Soluble in polar organic solvents
<b>Biodegradability</b>	: Ready biodegradable (25% DOC removal 11_d, 99% DOC removal 14_d)
<b>Octanol/Water Partition Coefficient (K<sub>ow</sub>):</b>	3.06 x 10 <sup>-2</sup> at 22 °C (log K <sub>ow</sub> -1.52)



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**SECTION 10 - STABILITY AND REACTIVITY****10.1 Reactivity**

No hazardous reactions if stored and handled as prescribed.

**10.2 Stability**

The product is stable if stored and handled as prescribed.

Stable at room temperature in air.

**Stability in the Presence of Bases**

Cyrene is a cyclic ketone containing three protons alpha to the carbonyl group and, like cyclohexanone, it will form initially dimers and then oligomers and insoluble polymers when treated with strong bases such as sodium hydroxide, potassium carbonate and many strongly basic organic amines. Cyrene is however unchanged by heating in chloroform in the presence of triethylamine at 60 °C for 18 hours.

**Stability in the Presence of Acids**

Cyrene is relatively stable in the presence of weak acids and, for example, can be heated with trifluoroacetic acid at 60 °C for 18h without apparent change. Brief treatment with 2\_M hydrochloric acid however rapidly converts Cyrene to a mixture of products that have not yet been characterised.

**Stability to Oxidizing Agents**

Cyrene reacts violently with 30% aqueous hydrogen peroxide at room temperature. It will react selectively with hydrogen peroxide and peracids, such as peracetic and *m*-chloroperbenzoic acid under carefully controlled conditions to afford a mixture of (5S)-dihydro-5-(hydroxymethyl)-2(3H)-furanone and its formyl ester. Reactivity with other strong oxidants has not been tested and caution should be exercised whenever doing so in view of the violence of the reaction with 30% hydrogen peroxide.

**Thermal Stability**

Combustible. Strong exothermic decomposition at temperatures above 200 °C. If Cyrene needs to be distilled, distillation must be conducted under a reduced pressure (typically <5 kPa) to reduce the boiling point to 130 °C or lower. The thermal stability of Cyrene™ will be affected by strong acid, bases or oxidants.

**10.3 Possibility of hazardous reactions**

Reacts with strong acids, strong alkalis, strong oxidising and reducing agents.

**10.4 Conditions to avoid**

Temperatures above 120 °C when ignition sources present.

Temperatures above 200 °C where exothermic decomposition is probable.

Exposure to moisture, direct sunlight and/or air should be kept to a minimum.



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### 10.5 Incompatible materials

Reacts with strong acids, strong alkalis, strong oxidising and reducing agents.

### 10.6 Hazardous decomposition products

Cyrene is a compound composed of carbon, hydrogen and oxygen. Efficient and complete thermal oxidation (combustion) will produce carbon dioxide and water.

Incomplete thermal decomposition can liberate carbon monoxide and unknown pyrolysis products or products of incomplete thermal oxidation (combustion efficiency dependent of temperature and availability of sufficient combustion air).

Unknown pyrolysis products or products of incomplete thermal oxidation should be considered potentially hazardous.

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## SECTION 11 - TOXICOLOGICAL INFORMATION

<b>Acute Toxicity</b>	:	<b>LD50 &gt; 2,000 mg/kg (oral, rat)</b> (OECD TG 423)
<b>Repeated Dose Toxicity</b>	:	<b>NOAEL = 1000 mg/kg bw/day (oral, rat)</b> (OECD TG 422)
<b>Skin Corrosion/Irritation</b>	:	<b>Non-irritating (rabbit, 4 h)</b> (OECD TG 404)
	:	<b>Non-corrosive</b> (OECD TG 435) (Corrositex Method)
<b>Serious Eye Damage/Irritation</b>	:	<b>Eye Irritant</b> (OECD TG 437)
	:	<b>Serious Eye Irritant (Category 2)</b> (Ocular Irritation Method)
<b>Skin Sensitisation</b>	:	<b>Non-sensitising (Mouse)</b> (OECD TG 429)
<b>Respiratory Sensitisation</b>	:	No data available
<b>Germ Cell Mutagenicity</b>	:	<b>Negative</b> ( <i>Salmonella typhimurium</i> , both with and without metabolic activation) (OECD TG 471) (Ames Test)
	:	<b>Not mutagenic</b> (In vitro Mammalian Cell Micronucleus Test) (OECD TG 487)
	:	<b>Not mutagenic</b> (In vitro Mammalian Gene Mutation Test) (OECD TG 476)
<b>Carcinogenicity</b>	:	No data available
<b>Reproductive Toxicity</b>	:	<b>Not reprotoxic (Rat)</b> (OECD TG 422)
<b>Specific Target Organ Toxicity (STOT) - single exposure</b>	:	<b>Eyes.</b> No other data available
<b>Specific Target Organ Toxicity (STOT) - repeated exposure</b>	:	<b>Eyes.</b> No other data available
<b>Aspiration Hazard</b>	:	No data available

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**SECTION 11 - - - - -****CONTINUED****Potential Routes of Exposure and Health Effects**

- Inhalation** : May be harmful if inhaled. May cause respiratory tract irritation.
- Ingestion** : May be harmful if swallowed.
- Skin** : May cause skin irritation.
- Eyes** : **Can cause eye irritation. Vapours can be lachrymatory.**
- Note** : If symptoms are severe or persistent seek medical attention.

**Early onset symptoms related to exposure**

No data available.

**Delayed health effects from exposure**

No data available. Potential delayed irritation of eyes and skin.

**Exposure Levels and Health Effects**

No data available.

**Interactive effects**

No known interactive effects from drinking alcohol, taking medications or smoking.

No known aggravation of pre-existing medical conditions or predisposition to allergic reactions.

**Note:** The full toxicological and physiological properties of Cyrene are not currently known so a **precautionary approach should be adopted** with respect to chemical hygiene and personal protection from exposure.

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**SECTION 12 - ECOLOGICAL INFORMATION****12.1 Ecotoxicity**

<b>Algae:</b>	Barely toxic, Growth inhibition EC50 >100 mg/L, NOEC $\geq$ 100 mg/L, (72 h), ( <i>Pseudokirchneriella subcapitata</i> - OECD TG 201)
<b>Planktonic Crustaceans:</b>	Barely toxic, Mobility EC50 >100 mg/L, NOEC $\geq$ 100 mg/L (48 h), ( <i>Daphnia magna</i> - OECD TG 202)
<b>Aerobic Bacteria:</b>	Barely inhibitory on aerobic bacterial reproduction, NOEC 500 mg/L, 3 h; EC10 555 mg/L, EC50 > 1000 mg/L, 3 h. (Activated Sludge Respiration Inhibition Test - OECD TG 209)
<b>Fish:</b>	Mortality, LC50 > 100 mg/L, NOEC $\geq$ 100 mg/L, (96 h), ( <i>Oncorhynchus mykiss</i> - Rainbow Trout - OECD TG 203)
<b>Plants:</b>	No data available

**12.2 Persistence and Degradability**

**Biodegradation :** Readily biodegradable; 99 %, 14 d (DOC Die-Away Test, OECD TG 301)

**Biological Oxygen Demand (BOD):** No data available.

**Chemical Oxygen Demand (COD):** No data available.

**12.3 Bio-accumulative potential**

This product will not persist (readily biodegradable) and/or bio-accumulate in the aquatic environment (Log  $K_{ow}$  = -1.52 and BCF <500).

The substance has a low octanol/water partition coefficient (log  $K_{ow}$ ) and is therefore expected to have a low potential for adsorption into organic sediments or soils.

**12.4 Mobility in Soil**

No available data. Product is miscible in water and readily biodegradable.

The substance has a low octanol/water partition coefficient (Log  $K_{ow}$ ) and is therefore expected to have a low potential for adsorption into organic sediments or soils.

**12.5 Other adverse effects**

No data available

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**SECTION 13 - DISPOSAL CONSIDERATIONS****13.1 Regulatory Requirements**

The generation of waste should be minimized or avoided wherever possible.

Recover, recycle and/or reuse waste products wherever possible.

Waste must be disposed of safely according to local environmental regulations. When handling waste, the safety precautions applying to the handling of the product should be considered.

Consult with the EPA as to whether the waste product is regulated as a prescribed or listed waste, as special waste management provisions and disposal requirements may be required.

If deemed a regulated waste then compliance with the applicable regulatory provisions is required. This can include use of EPA licensed or permitted waste transporters, waste storage, treatment, and/or disposal premises.

**13.2 Waste Handling**

The clean-up and collection of waste generated through any accidental release should take place by trained personnel appropriately outfitted with protective clothing and equipment, as described in Sections 6, 7 and 8 of this SDS, until the waste has been collected and contained in sealed containers.

Care should be taken when handling emptied containers that have not been thoroughly cleaned or rinsed out. Empty containers may retain some product residues.

Waste, residues, empty containers, contaminated work clothes and contaminated cleaning materials should be collected in designated containers, and labelled prior to disposal.

**13.3 Waste Packaging and Labelling**

Metal or plastic containers with tight fitting closures are recommended for this product.

Containers should be labelled with type of waste and generators details (e.g. company name).

**13.4 Waste Storage**

Store in a cool, dry, and well ventilated bunded area. Keep containers upright. Protect containers from vehicular damage.

**13.5 Waste Transport and Tracking**

Where the waste product is regulated by EPA the waste transporter may require EPA approval to transport the waste to an EPA licensed waste storage, treatment, and/or disposal premises.

Where this is the case the waste generator must complete Part A of the Waste Transport Certificate (usually provided by the waste transporter) and send one copy to EPA and retain the other.

**CYRENE**

Alternatively, an electronic version of this requirement may be available.

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**SECTION 13 - - - - -****CONTINUED****13.6 Waste Disposal**

Where recovery, recycling and reuse is not practicable waste product can be disposed via a number of methods depending on the form and concentration of the waste product.

EPA should be consulted as to what local disposal options may be available.

**Waste Water Treatment Plant**

Liquid waste product may be able to be disposed to the site's waste water treatment plant at an appropriate concentration. Consult appropriate personnel before discharge.

**Sewer**

Where liquid waste product has been diluted and collected in wash waters it may be able to be disposed to sewer after consultation and approval by the local sewage authority.

**Thermal Treatment**

Liquid and solid waste product can be disposed of by incineration/gasification. The product is combustible and will only generate emissions of carbon dioxide and water if treated properly.

The thermal treatment facility will need to be licensed by EPA for this purpose.

**Landfill**

Solid waste product (e.g. absorbent used to mop up a spill) may be able to be disposed to secure landfill, as the product is biodegradable. Consult with EPA and local landfill operators to determine if this is possible. If landfill is not an option, then thermal treatment is the best disposal option for solid wastes.

**Incineration and landfill should only be considered when recycling is not feasible.**

Do not empty waste into storm water drains.

**Waste Management Plan**

The details concerning waste classification, collection, packaging, labelling, storage, transport and recycling, treatment and/or disposal options should be outlined in the site's waste management plan.

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**SECTION 14 - TRANSPORT INFORMATION****14.1 UN number: Not Applicable. Not classified as a dangerous goods.****ADR/RID:** Not dangerous goods (Road and Rail Transport)**IMDG:** Not dangerous goods (Maritime Transport)**IATA-DGR:** Not dangerous goods (Air Transport)**14.2 UN proper shipping name**

Not Applicable. Not classified as a dangerous goods.

**14.3 Transport hazard class(es)**

Does not meet classification criteria for assignment of a dangerous goods hazard class.

**14.4 Packaging group**

Does not meet classification criteria for assignment of a dangerous goods hazard class, so assignment of packaging group not applicable.

**14.5 Environmental hazards****ADR/RID:** No**IMDG Marine pollutant:** No**IATA-DGR:** No**14.6 Special precautions for user**

No special precautions unless accidental release occurs, then the provisions and advice of this SDS are applicable.

**14.7 Additional Information**Cyrene has been registered under Annex VII of the REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) regulation to enable the import of Cyrene into the European Union (EU).

REACH addresses the production and use of chemical substances, and their potential impacts on both human health and the environment.

**14.8 HAZCHEM Code: 2ZE**

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**SECTION 15 - REGULATORY INFORMATION****15.1 International**

Cyrene is not classified as a dangerous goods or carcinogen under international requirements.

Cyrene has been registered under Annex VIII of the REACH regulation for import into the EU.

Cyrene is not an ozone depleting substance, nor a persistent organic pollutant, as defined by UN Conventions.

**15.2 Safety, Health and Environmental Regulations**

Various occupational health and safety and environmental legislation, regulations, policy and guidelines may/will be applicable to the management, use, and disposal of this substance.

Requirements will vary from jurisdiction to jurisdiction. Consultation is required.

If in doubt as to its regulatory status contact the local relevant competent authority (e.g. WorkSafe, EPA, etc).

Guidance is provided in this SDS to enable basic compliance with expected occupational health and safety and environmental requirements.

Cyrene is not regulated under the Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) established under the *Therapeutic Goods Act 1989* (Commonwealth) (as amended).

Cyrene is not regulated under the *Agricultural and Veterinary Chemicals Act 1988* (Commonwealth) and/or applicable Commonwealth, State or Territory control-of-use legislation.

Cyrene is currently registered under the *Industrial Chemicals (Notification and Assessment) Act 1989* (Commonwealth), including listing in the Australian Inventory of Chemical Substances (AICS).

Cyrene is not currently listed in Australia's waste coding and classification system. The applicable generic entry of 'organic solvents and solvent residues' (item 7), 'wastes arising from the production, formulation and use of organic solvents, not otherwise specified in this item' (description of waste), provides a waste code of G160 for this product, as it is not classified as a dangerous good. Consultation with EPA is required to determine if this waste product is to be regulated as such.

**SECTION 16 - OTHER INFORMATION**

**As a new bio-based organic solvent Cyrene is currently being assessed for a variety of industrial applications in the research and development of industrial products and pharmaceuticals.**

Circa Group believes the above information to be correct, but does not claim that it is comprehensive. The information provided is intended to be used as a guide only. The information is based on the present state of Circa's knowledge and is applicable to the product with regard to appropriate safety and environmental precautions. It does not represent any guarantee of the properties of the product. Circa Group Pty. Ltd., shall not be held liable for any damage resulting from handling or from contact with the above product.