

SAFETY DATA SHEET

(GHS, Appendix 4)

SECTION 1 : IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : Celestolide

EC N° : 236-114-4

CAS N° : 13171-00-1

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

Industrial-grade aromatic raw material, not intended for retail sale

1.3. Details of the supplier of the safety data sheet

Registered company name : Aromatics Original Material Co., Ltd.

Address : 3/8 1st floor Bangwaek Rd, Bangpai, Bangkae, Bangkok 10160 Thailand.

SECTION 2 : HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

GHS compliant.

Flammable liquid, Category 4 (Flam. Liq. 4, H227).

Acute dermal toxicity, Category 5 (Acute Tox. 5, H313).

Hazardous to the aquatic environment - Acute hazard, Category 1 (Aquatic Acute 1, H400).

Hazardous to the aquatic environment - Chronic hazard, Category 1 (Aquatic Chronic 1, H410).

2.2. Label elements

GHS compliant.

Hazard pictograms :



GHS09

Signal Word :

WARNING

Product identifier (list of classified components):

CAS 13171-00-1 4-ACETYL-6-T-BUTYL-1,1-DIMETHYLINDAN

Hazard statements :

H227 Combustible liquid.

H313 May be harmful in contact with skin.

H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements - Prevention :

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

Precautionary statements - Response :

P312 Call a POISON CENTER/doctor/... if you feel unwell.

P391 Collect spillage.

Precautionary statements - Storage :

P403 + P235 Store in a well-ventilated place. Keep cool.

Precautionary statements - Disposal :

P501 Dispose of contents/container in accordance with local regulation.

2.3. Other hazards

SECTION 3 : COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substances

Composition :

Identification	Classification GHS	Note	%
CAS: 13171-00-1 EC: 236-114-4 4-ACETYL-6-T-BUTYL-1,1-DIMETHYLINDAN	GHS09 Wng Acute Tox. 5, H313 Aquatic Acute 1, H400 M Acute = 1 Aquatic Chronic 1, H410 M Chronic = 1		100%
CAS: 64-17-5 EC: 200-578-6 REACH: 01-2119457610-43-0000 ETHYL ALCOHOL	GHS02, GHS07 Dgr Eye Irrit. 2, H319 Flam. Liq. 2, H225	[i]	0 ≤ x % < 1

Information on ingredients :

[i] Substance for which maximum workplace exposure limits are available.

SECTION 4 : FIRST AID MEASURES

As a general rule, in case of doubt or if symptoms persist, always call a doctor.

NEVER induce swallowing by an unconscious person.

4.1. Description of first aid measures

In the event of splashes or contact with eyes :

Wash thoroughly with fresh, clean water for 15 minutes holding the eyelids open.

If there is any redness, pain or visual impairment, consult an ophthalmologist.

In the event of splashes or contact with skin :

Remove any soiled or splashed clothing immediately.

Watch out for any remaining product between skin and clothing, watches, shoes, etc.

If the contaminated area is widespread and/or there is damage to the skin, a doctor must be consulted or the patient transferred to hospital.

In the event of swallowing :

In the event of swallowing, if the quantity is small (no more than one mouthful), rinse the mouth with water and consult a doctor.

Keep the person exposed at rest. Do not force vomiting.

Seek medical attention, showing the label.

If swallowed accidentally, call a doctor to ascertain whether observation and hospital care will be necessary. Show the label.

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

No data available.

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

No data available.

SECTION 5 : FIREFIGHTING MEASURES

Flammable.

Combustible liquid.

Chemical powders, carbon dioxide and other extinguishing gas are suitable for small fires.

5.1. Extinguishing media

Keep packages cool when in the vicinity of flames.

Suitable methods of extinction

In the event of a fire, use :

- sprayed water or water mist
- water with AFFF (Aqueous Film Forming Foam) additive
- foam
- multipurpose ABC powder
- BC powder
- carbon dioxide (CO₂)

Prevent the effluent of fire-fighting measures from entering drains or waterways.

Unsuitable methods of extinction

In the event of a fire, do not use :

- water jet

5.2. Special hazards arising from the substance or mixture

A fire will often produce a thick black smoke. Exposure to decomposition products may be hazardous to health.

Do not breathe in smoke.

In the event of a fire, the following may be formed :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

5.3. Advice for firefighters

Fire-fighting personnel are to be equipped with autonomous insulating breathing apparatus.

SECTION 6 : ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Consult the safety measures listed under headings 7 and 8.

For non first aid worker

Avoid any contact with the skin and eyes.

For first aid worker

First aid workers will be equipped with suitable personal protective equipment (See section 8).

6.2. Environmental precautions

Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.

Prevent any material from entering drains or waterways.

If the product contaminates waterways, rivers or drains, alert the relevant authorities in accordance with statutory procedures

Use drums to dispose of collected waste in compliance with current regulations (see section 13).

6.3. Methods and material for containment and cleaning up

Retrieve the product by mechanical means (sweeping/vacuuming).

6.4. Reference to other sections

No data available.

SECTION 7 : HANDLING AND STORAGE

Requirements relating to storage premises apply to all facilities where the substance is handled.

7.1. Precautions for safe handling

Always wash hands after handling.

Remove and wash contaminated clothing before re-using.

Ensure that there is adequate ventilation, especially in confined areas.

Remove contaminated clothing and protective equipment before entering eating areas.

Fire prevention :

Handle in well-ventilated areas.

Vapours are heavier than air. They can spread along the ground and form mixtures that are explosive with air.

Prevent the formation of flammable or explosive concentrations in air and avoid vapor concentrations higher than the occupational exposure limits.

Prevent the accumulation of electrostatic charges with connections to earth.

Use the mixture in premises free of naked flames or other sources of ignition and ensure that electrical equipment is suitably protected.

Keep packages tightly closed and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorised personnel.

Recommended equipment and procedures :

For personal protection, see section 8.

Observe precautions stated on label and also industrial safety regulations.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Prohibited equipment and procedures :

No smoking, eating or drinking in areas where the substance is used.

Never open the packages under pressure.

7.2. Conditions for safe storage, including any incompatibilities

No data available.

Storage

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from all sources of ignition - do not smoke.

Keep well away from all sources of ignition, heat and direct sunlight.

Avoid accumulation of electrostatic charges.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

Packaging

Always keep in packaging made of an identical material to the original.

7.3. Specific end use(s)

No data available.

SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**8.1. Control parameters****Occupational exposure limits :**

- ACGIH TLV (American Conference of Governmental Industrial Hygienists, Threshold Limit Values) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
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64-17-5 ETHYL ALCOHOL		1000 ppm 1880 mg/m ³			
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- France :

CAS	VME-ppm :	VME-mg/ m ³ :	VLE-ppm :	VLE-mg/m ³ :	Notes :	TMP No :
64-17-5 ETHYL ALCOHOL	1000	1900	5000	9500		84

- Switzerland :

CAS	VME	VLE	Valeur plafond	Notations
64-17-5 ETHYL ALCOHOL	500 ppm 960 mg/m ³	1000 ppm 1920 mg/m ³		

- South Africa / DME (Department of Minerals and Energy) :

- South Africa / DOL RL (Department of Labour, Recommended limits) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL		2000 ppm			

- Australia :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	200 ppm 380 mg/m ³	800 ppm 1500 mg/m ³			

- Canada / Alberta :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	1000 ppm 1880 mg/m ³				

- Canada / British Colombia :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL		1000 ppm			

- Canada / Manitoba :

- Canada / Ontario :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL		1 000 ppm			

- Canada / Quebec :

- Ireland :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL		1000 ppm			

- New Zealand :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	200 ppm 380 mg/m ³	800 ppm 1520 mg/m ³			

- UK :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	1000 ppm 1920 mg/m ³				

- Thailand :

- Turkey :

- USA / NIOSH IDLH (National Institute for Occupational Safety and Health, Immediately Dangerous to Life or Health Concentrations) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	1000 ppm				

- USA / OSHA PEL (Occupational Safety and Health Administration, Permissible Exposure Limits) :

CAS	TWA :	STEL :	Ceiling :	Definition :	Criteria :
64-17-5 ETHYL ALCOHOL	1000 ppm 1900 mg/m ³				

- Vietnam :

8.2. Exposure controls

Personal protection measures, such as personal protective equipment

Pictogram(s) indicating the obligation of wearing personal protective equipment (PPE) :



Use personal protective equipment that is clean and has been properly maintained.

Store personal protective equipment in a clean place, away from the work area.

Never eat, drink or smoke during use. Remove and wash contaminated clothing before re-using. Ensure that there is adequate ventilation, especially in confined areas.

- Eye / face protection

Avoid contact with eyes.

Use eye protectors designed to protect against liquid splashes

Before handling, wear safety goggles in accordance with standard ISO 16321.

Before handling powders or dust emission, wear mask goggles in accordance with standard ISO 16321.

- Hand protection

Use suitable protective gloves that are resistant to chemical agents in accordance with standard EN ISO 374-1.

Gloves must be selected according to the application and duration of use at the workstation.

Protective gloves need to be selected according to their suitability for the workstation in question : other chemical products that may be handled, necessary physical protections (cutting, pricking, heat protection), level of dexterity required.

Type of gloves recommended :

- PVA (Polyvinyl alcohol)

- Butyl Rubber (Isobutylene-isoprene copolymer)

- Body protection

Avoid skin contact.

Wear suitable protective clothing.

Suitable type of protective clothing :

In the event of substantial spatter, wear liquid-tight protective clothing against chemical risks (type 3) in accordance with EN14605/A1 to prevent skin contact.

Wear protective clothing against solid chemicals and particles suspended in the air (type 5) in accordance with standard EN13982-1/A1 to prevent skin contact.

In the event of a risk of splashing, wear protective clothing against chemical risks (type 6) in accordance with EN13034/A1 to prevent skin contact.

Work clothing worn by personnel shall be laundered regularly.

After contact with the product, all parts of the body that have been soiled must be washed.

- Respiratory protection

Avoid inhaling dust.

Type of FFP mask :

Wear a disposable half-mask dust filter in accordance with standard EN149/A1.

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**9.1. Information on basic physical and chemical properties**

No data available.

Physical state

Physical state : Solid.

Colour

Unspecified

Odour

Odour threshold : Not stated.

Melting point

Melting point/melting range : Not specified.

Freezing point

Freezing point / Freezing range : Not stated.

Boiling point or initial boiling point and boiling range

Boiling point/boiling range : Not specified.

Flammability

Combustible.

Lower and upper explosion limit

Explosive properties, lower explosivity limit (%) : Not stated.

Explosive properties, upper explosivity limit (%) : Not stated.

Flash point

Flash Point : 76.00 °C.

Method for determining the flash point:

ASTM D 93-15 (Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester).

Auto-ignition temperature

Self-ignition temperature : Not specified.

Decomposition temperature

Decomposition point/decomposition range : Not specified.

pH

pH : Not relevant.

pH (aqueous solution) : Not stated.

Kinematic viscosity

Viscosity : Not stated.

Solubility

Water solubility : Insoluble.

Fat solubility : Not stated.

Partition coefficient n-octanol/water (log value)

Partition coefficient: n-octanol/water : Not stated.

Vapour pressure

Vapour pressure (50°C) : Not stated.

Density and/or relative density

Density : NA

Method for determining the density :

NF ISO 279:1999 (T75-111).

Relative vapour density

Vapour density : Not stated.

9.2. Other information

Index of refraction : NA

Method of determining the refractive index :

NF ISO 280:1999 (T75-112)

9.2.1. Information with regard to physical hazard classes

No data available.

9.2.2. Other safety characteristics

No data available.

SECTION 10 : STABILITY AND REACTIVITY

10.1. Reactivity

No data available.

10.2. Chemical stability

This substance is stable under the recommended handling and storage conditions in section 7.

10.3. Possibility of hazardous reactions

When exposed to high temperatures, the substance can release hazardous decomposition products, such as carbon monoxide and dioxide, fumes and nitrogen oxide.

10.4. Conditions to avoid

Any apparatus likely to produce a flame or to have a metallic surface at high temperature (burners, electric arcs, furnaces etc.) must not be allowed on the premises.

Avoid :

- accumulation of electrostatic charges.
- flames and hot surfaces
- formation of dusts

10.5. Incompatible materials

No data available.

10.6. Hazardous decomposition products

The thermal decomposition may release/form :

- carbon monoxide (CO)
- carbon dioxide (CO₂)

SECTION 11 : TOXICOLOGICAL INFORMATION**11.1. Information on toxicological effects****11.1.1. Substances****a) Acute toxicity :**

4-ACETYL-6-T-BUTYL-1,1-DIMETHYLINDAN (CAS:
13171-00-1)

Dermal route :

LD50 = 3690 mg/kg body weight

May be harmful in contact with skin.

b) Skin corrosion/skin irritation :

Repeated or prolonged contact with the substance may cause removal of natural oil from the skin resulting in non-allergic contact dermatitis and absorption through the skin.

c) Serious damage to eyes/eye irritation :

Splashes in the eyes may cause irritation and reversible damage

d) Respiratory or skin sensitisation :

No data available.

e) Germ cell mutagenicity :

No data available.

f) Carcinogenicity :

No data available.

g) Reproductive toxicant :

No data available.

h) Specific target organ systemic toxicity - single exposure :

No data available.

i) Specific target organ systemic toxicity - repeated exposure :

No data available.

j) Aspiration hazard :

No data available.

11.1.2 Complex substance**11.1.2.1 Information on hazard classes****a) Acute toxicity :**

Oral route : No data available.

Dermal route : May be harmful in contact with skin.

Inhalation route (Dusts/mist) : No data available.

b) Skin corrosion/skin irritation :

No data available.

c) Serious damage to eyes/eye irritation :

Splashes in the eyes may cause irritation and reversible damage

d) Respiratory or skin sensitisation :

No data available.

e) Germ cell mutagenicity :

No data available.

f) Carcinogenicity :

No data available.

g) Reproductive toxicant :

No data available.

h) Specific target organ systemic toxicity - single exposure :

No data available.

i) Specific target organ systemic toxicity - repeated exposure :

No data available.

j) Aspiration hazard :

No data available.

11.1.2.2 Other information

Symptoms related to the physical, chemical and toxicological characteristics

Exposure to vapours from solvents in the mixture in excess of the stated occupational exposure limit may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on kidney, liver and central nervous system.

Symptoms produced will include headaches, numbness, dizziness, fatigue, muscular asthenia and, in extreme cases, loss of consciousness.

Monograph(s) from the IARC (International Agency for Research on Cancer) :

CAS 64-17-5 : IARC Group 1 : The agent is carcinogenic to humans.

11.2. Information on other hazards

SECTION 12 : ECOLOGICAL INFORMATION

Very toxic to aquatic life with long lasting effects.

The product must not be allowed to run into drains or waterways.

12.1. Toxicity

12.1.2 Complex substance

No aquatic toxicity data available for the substances.

12.2. Persistence and degradability

No data available.

12.3. Bioaccumulative potential

No data available.

12.4. Mobility in soil

No data available.

12.5. Results of PBT and vPvB assessment

No data available.

12.6. Endocrine disrupting properties

No data available.

12.7. Other adverse effects

No data available.

SECTION 13 : DISPOSAL CONSIDERATIONS

The appropriate waste management of the substance and/or its container must be determined in accordance with local regulations.

13.1. Waste treatment methods

Do not pour into drains or waterways.

Waste :

Waste management is carried out without endangering human health, without harming the environment and, in particular without risk to water, air, soil, plants or animals.

Recycle or dispose of waste in compliance with current legislation, via a certified collector or company.

Soiled packaging :

Give to a certified disposal contractor.

Transport product in compliance with provisions of the ADR for road, RID for rail, IMDG for sea and ICAO/IATA for air transport (ADR 2025 - IMDG 2024 [42-24] - ICAO/IATA 2026 [67]).

3077

UN3077=ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
(4-acetyl-6-*t*-butyl-1,1-dimethylindan)

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III

14.6. Special precautions for user

[illegible]

IMDG	Class	2°Label	Pack gr.	LQ	EMS	Provis.	EQ	Stowage Handling	Segregation	
	9	-	III	5 kg	F-A. S-F	274 335 375 966 967 969	E1	Category A SW23	-	
	Not subject to this regulation if Q ≤ 5 l / 5 kg (IMDG 3.3.1 - 2.10.2.7)									
IATA	Class	2°Label	Pack gr.	Passager	Passager	Cargo	Cargo	note	EQ	
	9	-	III	956	400 kg	956	400 kg	A97 A158 A179 A197 A215	E1	
	9	-	III	Y956	30 kg G	-	-	A97 A158 A179 A197 A215	E1	
	Not subject to this regulation if Q ≤ 5 l / 5 kg (IATA 4.4.4 - DS A197)									

For limited quantities, see part 2.7 of the OACI/IATA and chapter 3.4 of the ADR and IMDG.

For excepted quantities, see part 2.6 of the OACI/IATA and chapter 3.5 of the ADR and IMDG.

Marine pollutant (IMDG 3.1.2.9):(4-acetyl-6-t-butyl-1,1-dimethylindan)

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

No data available.

SECTION 15 : REGULATORY INFORMATION

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

The following regulations have been used:

- Globally Harmonized System of Classification and Labelling of Chemicals (GHS), review no. 8 (2019)

Container information:

No data available.

Particular provisions :

No data available.

Ozone-depleting substances (Regulation (EC) No 2024/590).

The substance does not pose a risk to the ozone layer.

15.2. Chemical safety assessment

No data available.

SECTION 16 : OTHER INFORMATION

Wording of the phrases mentioned in section 3 :

H225	Highly flammable liquid and vapour.
H313	May be harmful in contact with skin.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Abbreviations and acronyms :

LD50 : The dose of a test substance resulting in 50% lethality in a given time period.

LQ : Limited Quantity

EQ : Excepted Quantity

EmS : Emergency Schedule

E : Packing Instruction

REACH : Registration, Evaluation, Authorization and Restriction of Chemical Substances.

STEL : Short-term exposure limit

TWA : Time-Weighted Average

TMP : French Occupational Illness table

VLE : Threshold Limit Value (exposure)

VME : Average Exposure Value.

ADR : Agreement concerning the international carriage of dangerous goods by road.

GHS09 : Environment

IATA : International Air Transport Association.

IMDG : International Maritime Dangerous Goods.

ICAO : International Civil Aviation Organisation

PBT: Persistent, bioaccumulable and toxic.

RID : Regulations concerning the International carriage of Dangerous goods by rail.

vPvB : Very persistent, very bioaccumulable.

The information contained in this safety data sheet is based on our current knowledge at the time of publication and is provided in good faith. It does not constitute any guarantee of specific product properties nor establish any contractual relationship. The user remains solely responsible for safe and compliant use of the product in accordance with current regulations.