

1. PRODUCT AND COMPANY IDENTIFICATION:

PRODUCT CODE	A0035
PRODUCT NAME	COUMARIN
SUPPLIER	Shanghai M & U International Trade Co., Ltd. Rm 1717, No 598 North NuJiang Road 200333 Shanghai, China +86-21-32515501 32515502 sales@mu-intel.com

FOR EMERGENCIES CALL CHEMTREC: 800-424-9300 (24-HOURS)

2. HAZARD IDENTIFICATION:

Physical hazards

Not classified.

Health hazards

Acute toxicity, oral	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2A
Sensitization, skin	Category 1
Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation
Specific target organ toxicity, repeated exposure	Category 2 (kidney, liver)

Environmental hazards

Hazardous to the aquatic environment, acute hazard	Category 3
Hazardous to the aquatic environment, long-term hazard	Category 3

Label elements



Signal word

Danger

Hazard statement

H301	Toxic if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.

H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H373	May cause damage to organs (kidney, liver) through prolonged or repeated exposure.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement Prevention

P271	Use only outdoors or in a well-ventilated area.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves.
P280	Wear eye/face protection.

Response

P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P321	Specific treatment (see this label).
P330	Rinse mouth.
P333 + P313	If skin irritation or rash occurs: Get medical advice/attention.
P337 + P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.

Storage

P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.

Disposal

P501	Dispose of contents/container in accordance with local/regional/national/international regulations.
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Hazard(s) not otherwise classified (HNOC)

None known.

Supplemental information

None.

3. COMPOSITION AND INFORMATION ON INGREDIENTS:

Substances

Chemical name	Common name and synonyms	CAS number	%
COUMARIN	COUMARINIC LACTONE COUMARINIC ANHYDRIDE 2H-Benzopyran-2-one chromen-2-one	91-64-5	100

4. FIRST-AID GUIDE:

Inhalation

If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.

For breathing difficulties, oxygen may be necessary. Call a physician if symptoms develop or persist.

Skin contact

Take off immediately all contaminated clothing. Get medical attention if irritation develops and persists. Wash skin thoroughly with soap and water for several minutes.

Eye contact

Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists. Promptly wash eyes with plenty of water while lifting the eye lids.

Ingestion

Call a physician or poison control center immediately. If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Most important symptoms/effects, acute and delayed

Irritation of eyes and mucous membranes. May cause allergic skin reaction. Edema. Liver enlargement. Jaundice. Proteinuria. Prolonged exposure may cause chronic effects.

Indication of immediate medical attention and special treatment needed

Not available.

General information

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. FIRE-FIGHTING GUIDE:

Suitable extinguishing media

Water spray, fog, CO₂, dry chemical, or alcohol resistant foam.

Unsuitable extinguishing media

Do not use a solid water stream as it may scatter and spread fire.

Specific hazards arising from the chemical

Fire may produce irritating, corrosive and/or toxic gases.

Special protective equipment and precautions for firefighters

Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Structural firefighters protective clothing will only provide limited protection. Wear self-contained breathing apparatus with a full face piece operated in the positive pressure demand mode when fighting fires.

Firefighting equipment/instructions

In case of fire and/or explosion do not breathe fumes. Use standard firefighting procedures and consider the hazards of other involved materials. Move containers from fire area if you can do so without risk. Water runoff can cause environmental damage. Ventilate closed spaces before entering them. Keep run-off water out of sewers and water sources. Dike for water control.

Specific methods

Use water spray to cool unopened containers.

General fire hazards

Static charges generated by emptying package in or near flammable vapor may cause flash fire.

6. ACCIDENTAL RELEASE GUIDE:

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Eliminate all sources of ignition. Avoid contact with skin or inhalation of spillage, dust or vapor.

Methods and materials for containment and cleaning up

Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Clean surface thoroughly to remove residual contamination. Never return spills in original containers for re-use. Collect and dispose of spillage as indicated in section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Contact local authorities in case of spillage to drain/aquatic environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water. Retain and dispose of contaminated wash water.

7. HANDLING AND STORAGE:

Precautions for safe handling

Do not handle or store near an open flame, heat or other sources of ignition. Take precautionary measures against static discharges. All equipment used when handling the product must be

grounded. Avoid breathing vapor. Avoid prolonged exposure. Wash thoroughly after handling. Avoid contact with eyes, skin, and clothing.

Conditions for safe storage, including any incompatibilities

Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area.

8. EXPOSURE AND PERSONAL PROTECTION:

Occupational exposure limits

No exposure limits noted for ingredient(s).

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Use explosion-proof ventilation equipment to stay below exposure limits.

Individual protection measures, such as personal protective equipment

Eye/face protection

Avoid contact with eyes. Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection

Chemical resistant gloves.

Other

Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic dust cartridge.

Thermal hazards

Not available.

General hygiene considerations

When using, do not eat, drink or smoke. Avoid contact with eyes. Avoid contact with skin. Wash hands before breaks and immediately after handling the product. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse. Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES:

Appearance	Refer to Spec Sheet
Physical state	Powder\Crystal.
Form	Crystalline powder.

Color	Crystalline powder.
Odor	Characteristic.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	159.8 °F (71 °C)
Initial boiling point and boiling range	573.8 °F (301 °C)
Flash point	> 200.0 °F (> 93.3 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit – lower (%)	Not available.
Flammability limit – upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	0 kPa at 25 °C 0.1 mm Hg at 20 °C
Vapor density	5.1
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Insoluble
Partition coefficient(n-octanol/water)	1.4
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	0.93 g/cm ³ estimated
Molecular formula	C ₉ H ₆ O ₂
Molecular weight	146.14 g/mol
Specific gravity	0.94 at 20 °C

10. STABILITY AND REACTIVITY:

Reactivity

Not available.

Chemical stability

May form explosive peroxides.

Possibility of hazardous reactions

Not available.

Conditions to avoid

Not available.

Incompatible materials

Not available.

Hazardous decomposition products

No hazardous decomposition products if stored and handled as indicated.

11. TOXICOLOGICAL INFORMATION:**Information on likely routes of exposure****Inhalation**

Irritating to respiratory system.

Skin contact

Causes skin irritation. May cause an allergic skin reaction.

Eye contact

Causes serious eye irritation.

Ingestion

Toxic if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Edema. Liver enlargement. Jaundice. Proteinuria. Irritant effects.

Information on toxicological effects**Acute toxicity**

Product	Species	Test Results
COUMARIN (CAS 91-64-5) Acute Oral LD50	Guinea pig Mouse Rat	202 mg/kg 196 mg/kg 293 mg/kg
Other LD50	Mouse	220 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization**Respiratory sensitization**

Due to lack of data the classification is not possible.

Skin sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Due to lack of data the classification is not possible.

IARC Monographs. Overall Evaluation of Carcinogenicity

COUMARIN (CAS 91-64-5) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity

Due to lack of data the classification is not possible.

Specific target organ toxicity single

Exposure

Specific target organ toxicity repeated

Exposure

Respiratory tract irritation.

May cause damage to organs (kidney, liver) through prolonged or repeated exposure.

Aspiration hazard

Not applicable.

Chronic effects

May cause damage to organs through prolonged or repeated exposure.

12. ECOLOGICAL INFORMATION:

Ecotoxicity

Harmful to aquatic life with long lasting effects. Accumulation in aquatic organisms is expected.

Product	Species	Test Results
COUMARIN (CAS 91-64-5)		
Aquatic		
Crustacea	LC50 Water flea (<i>Daphnia magna</i>)	10 - 18 mg/l, 48 hours
Fish	LC50 Guppy (<i>Poecilia reticulata</i>)	32 - 100 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Partition coefficient n-octanol / water (log Kow)

1.39

Bioconcentration factor (BCF)

< 10

Species: Leuciscus idus (Golden orfe)

Test Duration: 3 d

Mobility in soil

Not available.

Other adverse effects

Not available.

13. DISPOSAL RECOMMENDATIONS:**Disposal instructions**

Do not discharge into drains, water courses or onto the ground. Do not allow this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with chemical or used container. Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazardous waste code

Not established.

Waste from residues / unused products

Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).

Contaminated packaging

Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. TRANSPORTATION INFORMATION:

ADN	
UN number	2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Transport hazard class(es)	6.1(PGIII)
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No

Labels required	6.1
ADR	
UN number	2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Transport hazard class(es)	6.1(PGIII)
Subsidiary class(es)	-
Packing group	III
Environmental hazards	No
Labels required	6.1
RID	
UN number	2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Transport hazard class(es)	6.1(PGIII)
Subsidiary class(es)	-
Packing group III	
Environmental hazards	No
Labels required	6.1
DOT	
BULK	
UN number	2811
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Hazard class	6.1(PGIII)
Packing group	III
Environmental hazards	
Marine pollutant	No
Special provisions	IB8, IP3, T1, TP33
Packaging exceptions	153
Packaging bulk	240
DOT	
NON-BULK	
UN number	2811
Proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Hazard class	6.1(PGIII)
Packing group	III
Environmental hazards	
Marine pollutant	No
Special provisions	IB8, IP3, T1, TP33
Packaging exceptions	153
Packaging non bulk	213
IATA	
UN number	2811

UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Transport hazard class(es)	6.1(PGIII)
Subsidiary class(es)	-
Packing group III	
Environmental hazards	No
Labels required	6.1
IMDG	
UN number	2811
UN proper shipping name	TOXIC SOLID, ORGANIC, N.O.S. (COUMARIN)
Transport hazard class(es)	6.1(PGIII)
Subsidiary class(es)	-
Packing group	III
Environmental hazards	
Marine pollutant	No
Labels required	6.1
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

ADN; ADR; DOT BULK; DOT NON-BULK; IATA; IMDG; RID



15. REGULATORY INFORMATION:

US federal regulations

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard – Yes

Delayed Hazard - Yes

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard – No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical

Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

(SDWA)

Not regulated.

Food and Drug

Administration (FDA)

Barred from use in human food

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance
Not listed.

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION:

The information in this SDS was obtained from current and reliable sources. However, the data is provided without any warranty, expressed or implied, regarding its correctness or accuracy. Since the conditions for use, handling, storage and disposal of this product are beyond M&U's control, it is the responsibility of the user both to determine safe conditions for use of this product and to assume liability for loss, damage, or expense arising out of the products improper use. No warranty expressed or implied regarding the product described herein will be created by or inferred from any statement or omission in the SDS. Various federal, state, or provincial agencies may have specific regulations concerning the transportation, handling, storage, use, or disposal of this product which may not be reflected in the SDS. The user should review these regulations to ensure full compliance.

Prepared By: M&U International LLC

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