

## SAFETY DATA SHEET

according to Regulation (EC) No.-

### Section 1. Product and Company Information

**GHS Product Name:** Luteolin  
**Product Code:** FLV-25-5 | FLV-25-10  
**CAS:** [491-70-3]  
**Molecular Formula:**  $C_{15}H_{10}O_6$   
4H-1-Benzopyran-4-one,2-(3,4-dihydroxyphenyl)-5,7-dihydroxy-; 2-(3,4-dihydroxyphenyl)-5,7-dihydroxychromen-4-one; 3',4',5,7-Tetrahydroxyflavone; Digitoflavone; Luteolol; Flacitran; Salifazide; Bismite; Flavopurpol; Daphneflavonol  
**Company:** MarkHerb  
**Address:** Gedung Riset dan Inovasi (ex. PAU Lt. 8), Institut Teknologi Bandung, Jl Ganesha 10, Bandung 40132  
**Tel.:** +62 877-4556-0063  
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**Website:** [www.markherb.com](http://www.markherb.com)  
**E-mail:** [info@markherb.com](mailto:info@markherb.com)

### Section 2. Hazards Identification

#### 2.1 GHS classification

**PHYSICAL HAZARDS** Not classified

**HEALTH HAZARDS**

Skin Irritation (Category 2), H315

Eye Irritation (Category 2A), H319

Specific target organ toxicity - single exposure (respiratory tract irritation) (Category 3), H335

**ENVIRONMENTAL HAZARDS** Not classified

#### 2.2 GHS label elements, including precautionary statements

**Pictograms or hazard symbols**



**Signal word** Warning

**Hazard statements**

H315 Causes skin irritation

H319 Causes serious eye irritation

H335 May cause respiratory irritation

**Precautionary statements**

**Prevent**

- P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P264 Wash skin thoroughly after handling.  
 P271 Use only outdoors or in a well-ventilated area  
 P280 Wear protective gloves/eye protection/face protection.

**Response**

- P302 + P352 IF ON SKIN: Wash with plenty of 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.  
 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

**Section 3. Information on Basic Physical and Chemical Properties**

<b>Physical States:</b>	[ ] Gas [ X ] Liquid [ ] Solid	
<b>Melting Point:</b>	330°C (626°F)	
<b>Boiling Point:</b>	616.1±55.0°C at 760 mmHg	
<b>Flash Pt:</b>	239.5±25.0°C	
<b>Evaporation Rate:</b>	No data	
<b>Flammability (solid, gas):</b>	No data available.	
<b>Explosive Limits:</b>	<b>LEL:</b> No data.	<b>UEL:</b> No data
<b>Vapor Pressure (vs. Air or mm Hg):</b>	No data	
<b>Vapor Density (vs. Air = 1):</b>	No data	
<b>Specific Gravity (Water = 1):</b>	No data	
<b>Solubility in Water:</b>	0.388 g/l at 25°C	
<b>Solubility Notes:</b>	~1 mg/ml in a 1:5 solution of DMF	
	:PBS (pH 7.2); ~5 mg/ml in EtOH, ~57 mg/ml in DMSO, ~20 mg/ml in	
	DMF; Methanol (soluble); Acetone (soluble); (soluble); Hot water (very slightly soluble); diethyl ether (very slightly soluble);	
	Cold water (insoluble)	
<b>Autoignition Pt:</b>	No data	
<b>Percent Volatile:</b>	No data	
<b>Partition coefficient:</b>	log P <sub>ow</sub> : 2.53 (n-octanol/water)	
<b>pH:</b>	No data	

**Section 4. First aid measures**

**Description of first aid measures**

**If inhaled**

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If breathed in, move person into fresh air and keep at rest. If not breathing, give artificial respiration.

**In case of skin contact**

Remove contaminated clothes. Wash off with soap and plenty of water for at least 15 minutes.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes.

**If swallowed**

DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water.

**Most important symptoms and effects, both acute and delayed**

The most important known symptoms and effects are described in the labelling (see **section 2.2**).

**Indication of any immediate medical attention and special treatment needed**

No data available

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## Section 5. Fire Fighting Measures

**Suitable extinguishing**

**Media:** Dry chemical, alcohol-resistant foam, water spray, sand, earth, carbon dioxide. Cool closed containers exposed to fire with water spray. Do not use a solid water stream as it may scatter and spread fire.

**Precautions for firefighters:** Fire-extinguishing work is done from the windward and the suitable fire-extinguishing method according to the surrounding situation is used. Uninvolved persons should evacuate to a safe place. In case of fire in the surroundings: Remove movable containers if safe to do so.

**Special protective:**

**equipment for firefighters:** When extinguishing fire, be sure to wear personal protective equipment.

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## Section 6. Accidental Release Measures

**Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation.

**Environmental precautions**

Do not let product enter drains.

**General Information:**

Use proper personal protective equipment as indicated in **Section 8**.

**Spills/Leaks:**

Clean up spills immediately, observing precautions in the Protective Equipment section. Sweep up, then place into a suitable container for disposal. Decontaminate spill site with 10% caustic solution and ventilate area until after disposal is complete.

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## Section 7. Handling and Storage

**Precautions for safe handling:**

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation. Keep away from sources of ignition. Avoid prolonged or repeated exposure.

**Storage:**

Store in a well closed container. Protected from air and light, refrigerate or freeze (2-8°C)

**Specific end uses**

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## Section 8. Exposure Controls / Personal Protection

### Engineering controls:

Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits. Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels.

**Control parameters:** Not set up

### Personal protective equipment:

**Respiratory protection:** Dust respirator. Follow local and national regulations.

**Hand protection:** Protective gloves.

**Eye protection:** Wear safety glasses and chemical goggles if splashing is possible.

**Skin and body protection:** Wear appropriate protective gloves and clothing to prevent skin exposure.

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## Section 9. Stability and Reactivity

### Reactivity

Stable under recommended transport or storage conditions.

### Chemical Stability

Stable under normal temperatures and pressures.

### Conditions to Avoid

Incompatible materials, strong oxidants, heat, light.

### Incompatibilities with Other Materials

Strong oxidising/reducing agents, strong acids/alkalis.

### Hazardous Decomposition Products

Nitrogen oxides, carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, nitrogen.

### Hazardous Polymerization

Has not been reported.

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## Section 10. Toxicological Information

<b>Acute Toxicity:</b>	LD 50 Mouse - Intraperitoneal - 180 mg/kg
<b>Skin corrosion/irritation:</b>	No data
<b>Serious eye damage/irritation:</b>	No data
<b>Germ cell mutagenicity:</b>	No data
<b>Carcinogenicity:</b>	IARC = No data NTP = No data
<b>Reproductive toxicity:</b>	No data

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## Section 11. Ecological Information

**Toxicity:** No data

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<b>Persistence and degradability:</b>	No data
<b>Bioaccumulative potential:</b>	No data
<b>Mobility in soil:</b>	No data
<b>Results of PBT &amp; vPvB assessment:</b>	No data
<b>Other adverse effects:</b>	May be harmful to the aquatic environment.

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## Section 12. Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

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## Section 13. Transport Information

### Hazards Class

Does not meet the criteria for classification as hazardous for transport.

### UN proper shipping name ADR/RID

Not dangerous goods

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

### Transport hazard class(es)

Does not meet the criteria for classification as hazardous for transport.

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## Section 14. Regulatory Information

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

no data

### Chemical Safety Assessment

no data

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## Section 15. Additional Information

This MSDS above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no way shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if the company has been advised of the possibility of such damages.

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-----End of safety data sheet-----