

## Section 1. Product and Company Information


<b>GHS Product Name</b>	: Andrographolide
<b>Product Code</b>	: TER-1-50   TER-1-100
<b>CAS</b>	: [5508-58-7]
<b>Molecular Formula</b>	: C <sub>20</sub> H <sub>30</sub> O <sub>5</sub> (3E,4S)-3-[2-[(1R,4aS,5R,6R,8aS)-6-hydroxy-5-(hydroxymethyl)-5,8a-dimethyl-2-methylidene-3,4,4a,6,7,8-hexahydro-1H-naphthalen-1-yl]ethylidene]-4-hydroxyoxolan-2-one ; Andrographolide; 5508-58-7; Andrographis; UNII-410105JHGR; CHEBI:65408; 410105JHGR; (S,E)-4-Hydroxy-3-(2-((1R,4aS,5R,6R,8aS)-6-Hydroxy-5-(Hydroxymethyl)-5,8a-Dimethyl-2-Methylenedecahydronaphthalen-1-Yl)Ethylidene)Dihydrofuran-2(3H)-One; Andrografolida (INA)
<b>Company</b>	: MarkHerb
<b>Address</b>	: Gedung Riset dan Inovasi (ex. PAU Lt. 8), Institut Teknologi Bandung, Jl Ganesha 10, Bandung 40132
<b>Tel.</b>	: +62 877-4556-0063
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<b>Website</b>	: <a href="http://www.markherb.com">www.markherb.com</a>
<b>E-mail</b>	: <a href="mailto:info@markherb.com">info@markherb.com</a>

## Section 2. Hazards Identification

### 2.1 GHS classification

<b>PHYSICAL HAZARDS</b>	: Not classified
<b>HEALTH HAZARDS</b>	: Skin Irritation- Category 2 Eye Irritation- Category 2 STOT SE – Category 3
<b>ENVIRONMENTAL HAZARDS</b>	: Not classified

### 2.2 GHS label elements, including precautionary statements

<b>Pictograms or hazard symbols</b>	: 
<b>Signal word</b>	: Warning
<b>Hazard statements</b>	: H315 - Causes skin irritation H319 - Causes serious eye irritation

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<b>Precautionary statements</b>	H335 - May cause respiratory irritation : P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection P302 + P352 - IF ON SKIN: Wash with plenty of soap and water P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing P304+P312 If inhaled: Call a POISON CENTER or doctor/physician if you feel unwell. P312 - Call a POISON CENTER or doctor/physician if you feel unwell
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### Section 3. Information on Basic Physical and Chemical Properties

<b>Physical States</b>	: <input type="checkbox"/> Gas <input type="checkbox"/> Liquid <input checked="" type="checkbox"/> Solid
<b>Melting Point</b>	: 231 - 234 °C
<b>Boiling Point</b>	: No data
<b>Flash Pt</b>	: No data
<b>Evaporation Rate</b>	: No data
<b>Flammability (solid, gas)</b>	: No data
<b>Explosive Limits</b>	: No data
<b>Vapor Pressure (vs. Air or mmHg)</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>	: Insoluble
<b>Solubility Notes</b>	: Soluble in methanol and chloroform and insoluble in benzene and acetone
<b>Autoignition Pt</b>	: No data
<b>Percent Volatile</b>	: No data
<b>Partition coefficient</b>	: No data
<b>pH</b>	: No data

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## Section 4. First aid measures

### Description of first aid measures

#### If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration.

#### In case of skin contact

Wash off with soap and plenty of water.

#### In case of eye contact

Flush eyes with water as a precaution.

#### If swallowed

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, foam, water spray, carbon dioxide.

**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

Avoid dust formation. Avoid breathing vapors, mist or gas.

### 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

Use in a laboratory fume hood where possible. Refer to employer is COSHH risk assessment.

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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

No data available.

### Chemical Stability

Stable under normal temperatures and pressures.

### Conditions to Avoid

No data available.

### Incompatibilities with Other Materials

Strong oxidising agents and acids

### Hazardous Decomposition Products

Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

### Hazardous Polymerization

Has not been reported.

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## Section 10. Toxicological Information

<b>Acute Toxicity</b>	: No data
<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>	: No data
<b>Reproductive toxicity</b>	: No data

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## Section 11. Ecological Information

<b>Toxicity</b>	: No data
<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>	: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted
<b>Other adverse effects:</b>	: No data

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## Section 12. Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations. This material and its container must be disposed of in a safe way. When handling waste, the safety precautions applying to handling of the product should be considered.

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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-----**