



SAFETY DATA SHEET

according to Regulation (EC) No.-

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Section 1. Product and Company Information

GHS Product Name: Tiliroside
Product Code: FLV-21-5
CAS: [20316-62-5]
Molecular Formula: C₃₀H₂₆O₁₃
[(2R,3S,4S,5R,6S)-6-[5,7-dihydroxy-2-(4-hydroxyphenyl)-4-oxochromen-3-yl]oxy-3,4,5-trihydroxyoxan-2-yl]methyl (E)-3-(4-hydroxyphenyl)prop-2-enoate; Potengriffioside A; Kaempferol 3-O-β-D-(6"-O-(E)-p-coumaroyl)glucopyranoside; Astragalin 6-trans-p-coumarate; Tribuloside

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Section 2. Hazards Identification

2.1 GHS classification

PHYSICAL HAZARDS Not classified
HEALTH HAZARDS Not classified
ENVIRONMENTAL HAZARDS Not classified

2.2 GHS label elements, including precautionary statements

Pictograms or hazard symbols None
Signal word No signal word
Hazard statements None
Precautionary statements None

Section 3. Information on Basic Physical and Chemical Properties

Physical States: [] Gas [] Liquid [X] Solid
Melting Point: 269-271°C (516-520°F)
Boiling Point: 943.9±65.0°C at 760 mmHg
Flash Pt: 311.9±27.8°C
Evaporation Rate: No data

Flammability (solid, gas):	No data available.
Explosive Limits:	LEL: No data. UEL: No data
Vapor Pressure (vs. Air or mm Hg):	0.0±0.3 mmHg at 20°C
Vapor Density (vs. Air = 1):	No data.
Specific Gravity (Water = 1):	No data
Solubility in Water:	0.0014 g/l at 20°C; -1 mg/ml; practically insoluble
Solubility Notes:	Ethanol (soluble); DMSO
Autoignition Pt:	No data
Percent Volatile:	No data
Partition coefficient:	log Pow: 1,9 at 25°C (n-octanol/water)
pH:	5,3 at 100 g/l at 20°C

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

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.

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.

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.

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.

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.

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.

Section 10. Toxicological Information

Acute Toxicity:	LD ₅₀ Oral - Rat - 2000 mg/kg
Skin corrosion/irritation:	No data
Serious eye damage/irritation:	No data
Germ cell mutagenicity:	No data
Carcinogenicity:	IARC = No data NTP = No data
Reproductive toxicity:	No data

Section 11. Ecological Information

Toxicity:

Toxicity to daphnia and other aquatic invertebrates: EC₅₀ - Daphnia magna (Water flea) - 100 mg/l - 48 h

Persistence and degradability: Readily biodegradable

Bioaccumulative potential: No data

Mobility in soil: No data

Results of PBT & vPvB assessment: No data

Other adverse effects: May be harmful to the aquatic environment.

Section 12. Disposal Considerations

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

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.

Section 14. Regulatory Information

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

no data

Chemical Safety Assessment

no data

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.

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