



**Plant Health Care, Inc.**  
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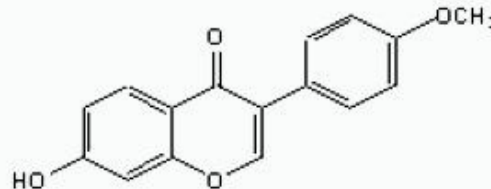
Phone: (412) 826-5488 x103  
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**Section 1. Chemical identification**

Batch or ID #:  
Name: Formononetin

**Section 2. Composition/information on ingredients**

Cas #: 485-72-3; EC #: 207-623-9  
4'-methoxy, 7-hydroxy isoflavone (>95%)  
Precipitated silica (2.5%)



**Section 3. Hazards identification**

*Precautionary statements*

Mild Irritant.  
Mildly Irritating to eyes and respiratory system.  
Estrogenic material: Mimics the effects of estrogen hormone.  
Wear suitable protective gloves and dust mask.

**Section 4. First-aid measures**

In case of skin contact, wash skin with soap water. Material can be absorbed through skin. In case of eye contact, rinse eyes with copious amounts of water. See physician if irritation occurs and persists.  
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.  
If swallowed and the person is conscious, rinse mouth with water. Call a physician.  
Wash contaminated clothing before reuse.

**Section 5. Fire-fighting measures**

*Extinguishing media*

Water spray.  
Carbon dioxide, dry chemical powder or appropriate foam.

*Special firefighting procedures*

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

*Unusual fire and explosions hazards:*

When burned, emits toxic smokes and fumes.

**Section 6. Accidental release measures**

Wear gloves, apron, respiratory and skin protection suitable to hazard situation.  
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust.  
Ventilate area and wash spill site after material pickup is complete.

**Section 7. Handling and storage**

Refer to section 8.

**Section 8. Exposure controls/personal protection**

Avoid prolonged contact with skin and clothing. Wash with soap and water.  
Use latex or similar chemical-resistant gloves. Wash thoroughly after handling.  
OSHA-approved particle mask or respirator as needed to prevent inhalation exposure.  
Keep tightly closed. Avoid breathing dust.  
Safety shower and eye bath. Mechanical exhaust as needed

**Section 9. Physical and chemical properties**

Molecular weight: 268

Appearance as a solid: Off-white to tan powder

Melting Point: 256-257°C

Solubility: Insoluble in water, completely soluble in di-methyl sulphoxide (DMSO), partially soluble in methanol, chloroform and ethyl acetate

**Section 10. Stability and reactivity**

*Incompatibilities:* Strong oxidizing agents

*Hazardous combustion or decomposition products:* Toxic fumes of carbon monoxide, carbon dioxide when burned.

**Section 11. Toxicological information**

*Acute effects*

- Acute Oral Toxicity (rat): LD<sub>50</sub> >5000 mg/Kg (No toxicity at this dose)
- Dermal toxicity (rat): LD<sub>50</sub> >5050 mg/Kg (No toxicity at this dose)
- Acute Eye Irritation (rabbit): minimally irritating, Category IV
- Primary Dermal Irritation (rabbit): Non-irritating
- Skin Sensitization (mice): Negative

Material may be mildly irritating to mucous membranes and upper respiratory tract.

The chemical, physical, and toxicological properties have not been thoroughly investigated.

However, this substance is currently used as a health food supplement in small doses of about 16 mg per day. Pregnant women should avoid exposure.

*Chronic effects*

None known. This material is classified as a phytoestrogenic compound. That is, it mimics the effects of the female hormone estrogen in mammalian physiology. Assays indicate that this material is 10,000 to 15,000 times LESS potent than 1,3-estradiol (estrogen). Pregnant women should avoid exposure. There is limited data available for long-term exposure of this substance on human physiology. An oral supplement of 16 mg/day formononetin for 12 months resulted in no reported adverse effects in the female study participants. Breast Cancer Res. 6(3):R170-179 and Am J Clin Nutr. 79(2):326-33.

*Carcinogenicity*

CAS# 485-72-3: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

**LD50/LC50:** Not available.

**Section 12. Ecological information**

Readily biodegradable (OECD Guideline No. 301B)

**Section 13. Disposal considerations**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Residual material may cause pollution to waterways. Dispose of empty packaging at a licensed landfill in accordance with all local, state and federal regulations.

**Section 14. Transport information**

US DOT: Not regulated as a hazardous material.

Canada TGD: No information available.

**Section 15. Regulatory information***US Federal***TSCA**

Formononetin (CAS #485-72-3) is produced under a TSCA Low Volume Exemption.

**Health & Safety Reporting List**

None of the chemicals are on the Health & Safety Reporting List.

**Chemical Test Rules**

None of the chemicals in this product are under a Chemical Test Rule.

**Section 12b**

None of the chemicals are listed under TSCA Section 12b.

**TSCA Significant New Use Rule**

None of the chemicals in this material have a SNUR under TSCA.

**CERCLA Hazardous Substances and corresponding RQs**

None of the chemicals in this material have an RQ.

**SARA Section 302 Extremely Hazardous Substances**

None of the chemicals in this product have a TPQ.

**Section 313** No chemicals are reportable under Section 313.

**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

**Clean Water Act:**

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

**OSHA:**

None of the chemicals in this product are considered highly hazardous by OSHA.

**STATE**

CAS# 485-72-3 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

**California Prop 65**

California No Significant Risk Level: None of the chemicals in this product are listed.



**European/International Regulations**

**European Labeling in Accordance with EC Directives**

**Hazard Symbols:** Xi (irritant)

**Risk Phrases:**

R 36/37/38 Irritating to eyes, respiratory system and skin.

**Safety Phrases:**

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 37/39 Wear suitable gloves and eye/face protection.

**WGK (Water Danger/Protection):** CAS# 485-72-3: No information available.

**Canada - DSL/NDSL:** None of the chemicals in this product are listed on the DSL or NDSL list.

**Section 16. Other information**

The above information is believed to be correct but does not imply to be all-inclusive and shall be used only as a guide. Plant Health Care, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.