

Material Safety Data Sheet

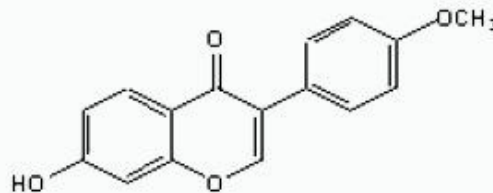
Section 1. Chemical identification

Name: Formononetin

Section 2. Composition/information on Main ingredient:

Cas # 485-72-3; EC # 207-623-9

4'-methoxy, 7-hydroxy isoflavone



Section 3. Hazards identification

Precautionary statements

Mild Irritant.

Mildly Irritating to eyes and skin.

Estrogenic material: Mimics the effects of estrogen hormone.

May be absorbed through skin. Wear suitable protective gloves and apron.

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 dried residue is 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.

Wipe up, place in a container and hold for waste disposal.

Wash spill site after material pickup is complete. Avoid breathing dust from dried material.

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. Keep tightly closed. When material dries, avoid inhalation of dust.

Safety shower and eye bath at large-scale handling or production facilities.

Section 9. Physical and chemical properties

Molecular weight of main ingredient (dry powder): 268

Appearance: Thick liquid with color added, usually red (pink). Melting Point: NA

Solubility: Insoluble in water, largely 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

May be harmful by ingestion. Can be absorbed through skin. May cause mild eye and skin irritation on contact.

The chemical, physical, and toxicological properties have not been thoroughly investigated. However, the main ingredient (formononetin) 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. The major ingredient (formononetin) 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); Residual material may cause pollution to waterways

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: "TSCA: CAS #485-72-3 (formononetin) is produced under 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.

None of the chemicals are listed under TSCA.

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 36/38 Irritating to eyes, 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.