FERMENTEK ltd
Making Fine Biochemicals

Safety Data Sheet: Genistein

1. Identification of the Substance and the Manufacturer

1.1. Product identifiers

Product name	Genistein	Formula	$C_{15}H_{10}O_5$
Product Code	GE	RTECS	NR2392000
CAS #	446-72-0	Molecularweight	270.24
ECHA #	207-174-9		
HSDB #	7475	Substance? Mixture?	Substance
Synonyms	▪ Genistein ▪ Genisteol ▪ 5,7-dihydroxy-3-(4-hydroxyphenyl)chromen-4-one ▪ 5,7-Dihydroxy-3-(4-hydroxyphenyl)-4-benzopyrone ▪ Isoflavone, 4',5,7-trihydroxy-		
Source	Soybean	Version Date	9 October, 2024

1.2. Intended uses of the Substance and uses advised against

1.2.1. Intended use:	1.2.2. Uses advised against:
Research and development. Laboratory reagent. Reference material. Manufacturing of substances. To be used by professionals only	Not a drug, Not a food additive Not to be used in humans or animals.

1.3. Contacts

1.3.1. Details of the supplier of the SDS

FERMENTEK ltd 4 Yatziv street, POB 47120 Jerusalem 97800, Israel	Tel: +972 2 5853953 Fax: +972 2 5853943 eMail: Fermentek@Fermentek.com Safety@Fermentek.com Website: Fermentek.com

This company is the manufacturer of the product and the supplier of the safety data sheet

1.3.2. Emergency Telephone number

For chemical emergency spill, leak, fire, exposure, or accident calls CHEMTREC day or night:
Within USA and Canada: 1-800-424-9300. Outside USA and Canada: +1 703-527-3887

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2. Hazards' identification

2.1. Classification of the substance or mixture

2.1.1. GHS Classification: According to EU Reg. 1272/2008 and US OSHA 1910.1200)

Skin Irritation	Cat.2	H315	Causes skin irritation
Eye Irritation	Cat.2	H319	Causes serious eye irritation
STOT/SE (respiratory tract)	Cat.2	H335	May cause respiratory irritation
Reproductive toxicity	1A,1B	H360	May damage fertility or the unborn child

2.2. GHS Label elements, including precautionary statements

2.2.1. Pictogram: {  } Signal word: {DANGER}

2.2.2. Hazard Statements

H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H360	May damage fertility or the unborn child
H410	Very toxic to aquatic life with long lasting effects

2.2.3. GHS Precautionary Statements

P203	Obtain, read and follow all safety instructions before use.
P261	Avoid breathing dust or mist.
P264	Wash { face, hands, and any exposed skin} thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection

2.2.4. GHS Response Phrases:

P318	If exposed or concerned, get medical advice.
P302+P352:	IF ON SKIN: Wash with soap and water.
P305+P351+P338:	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

3. Composition/information on ingredients

Substance	
Substance name:	Genistein
Concentration	<=100%
CAS Registry#:	446-72-0
EC#:	207-174-9
Molecular Formula:	$C_{15}H_{10}O_5$

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Molecular Weight:	*270.24*
Classification	*Irrit (H315, H319); Reprotox 1A,1B (H360);*
Mixture?	*Substance .*

4. First Aid Measures

4.1. Description of First Aid Measures

General advice:	*First-aiders need to protect themselves.* *If medical attention is required, show this safety data sheet to the doctor in attendance.*
Eye contact:	*Rinse out with plenty of water. Remove contact lenses.*
Skin Contact:	*In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.*

4.2. Most important symptoms and effects, both acute and delayed

General symptoms	*None known*

4.3. Indication of any immediate medical attention and special treatment needed

Note to physicians	*No data available*

5. Fire-fighting measures

5.1. Extinguishing media

Suitable extinguishing media	*Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.*
Unsuitable extinguishing media	*None known*

5.2. Other information

Hazardous combustion products	*Carbon oxides*
Advice for firefighters	*Wear self-contained breathing apparatus for fire fighting if necessary. Wear protective suit.*

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	*Use personal protective equipment as required. Keep people away from and upwind of spill/leak.*

6.2. Environmental precautions

Environmental precautions	*Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.*

6.3. Methods and material for containment and cleaning up

Methods for containment:	*Prevent further leakage or spillage if safe to do so. Cover the powder spill wa ith plastic sheet or tarp to minimize spreading. Dike far ahead of liquid spill for later disposal.*
Methods for cleaning up:	*Clean-up should be dealt with only by qualified personnel familiar with the specific substance. Cover liquid spill with sand, earth or other non-combustible absorbent material (e.g., sand, earth, diatomaceous earth, and vermiculite). Cover powder spill with plastic sheet or tarp to*

	minimize spreading. Sweep up and shovel into suitable containers for disposal.

7. Handling and storage

7.1. Precautions for safe handling

Advice on safe handling:	*Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Wash contaminated clothing before reuse. Do not breathe dust/fume/gas/mist/vapors/spray. Do not eat, drink or smoke when using this product.*

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions:	*Keep container tightly closed in a dry and well-ventilated place.* *Keep out of the reach of children.* *Store at -20 °C.*
Suitable packaging	*Must only be kept in original packaging.*
Incompatible materials:	*None known based on information available.*

8. Exposure Controls/Personal Protection

8.1. Control parameters

Control parameters	*Components with workplace control parameters*

8.2. Exposure controls

Appropriate engineering controls	*Showers, Eyewash stations, Ventilation systems* *Avoid contact with skin, eyes and clothing.* *Wash hands before breaks and immediately after handling the product.* *Use fumehood for routine work.*

8.3. Personal protective equipment

[PPE=Personal Protection Equipment]	
PPE: Respiratory protection	*Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).*
PPE: Hand Protection:	*Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and wash and dry hands*
PPE: Eye Protection:	*Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)*

PPE: Skin and Body Protection:	*Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. The selected protective gloves have to satisfy the specifications of Regulation (EU) 2016/425 and the standard EN 374 derived from it.*

9. Physical and chemical properties

9.1. Physical/chemical properties

Physical State at room temperature	*Solid / powder*
Appearance	*White to yellow powder*
No further safety relevant data are available	

10. Stability and reactivity

Reactivity:	*No information available.*
Chemical stability:	*Stable under normal conditions.*
Conditions to avoid	*Heat, flames and sparks. Sunlight.*
Incompatible materials	*Strong reducers and exidizers*
Possibility of Hazardous Reactions	*None under normal processing*
Hazardous combustion products	*See section 5*

11. Toxicological information

11.1. Information on toxicological effects

To the best of our knowledge, the toxicological effects of this product have not been thoroughly studied yet.

11.1.1. Acute Toxicity

Acute toxicity:	*IP,mouse; LD50 > 500 mg/kg*
Skin corrosion/irritation:	*No data available*
Serious eye damage/eye irritation:	*No data available*
Respiratory or skin sensitization/corrosion:	*No data available*

11.1.2. Chronic toxicity

Chronic toxicity	*No data available*

11.1.3. CRM (Carcinogene, Mutagene, Reproductive hazards)

Germ cell mutagenicity:	*Mutagenicity reported in human and rodent cell cultures.*
Carcinogenicity:	*No data available*

Reproductive toxicity / Teratogenicity:	***Rat female, Subcutaneous**,* *16-20 days postconceptionn, TDL0=125 mg/kg,* *teratogenicity: Specific Developmental Abnormalities - urogenital system, CNS* ***Subcutaneous, Rat female**, ,* *16-20 days postconception, TDL0=625 mg/kg* *Reproductive - Effects on Newborn - growth statistics (e.g.,%, reduced weight gain)* ***Oral, Rodent – male mouse** TDLo=13200 mg/kg, 22-day(s) pre-mating* *male fertility index males impregnating females per # males exposed to fertile nonpregnant females*

11.2. Additional information

RTECS number	*NR2392000*
General symptoms	***Vascular** - measurement of regional blood flow* ***Endocrine** – estrogenic* ***Endocrine** – androgenic* ***Behavioral** - somnolence (general depressed activity)* ***Behavioral** - somnolence (general depressed activity)*

12. Ecological Information

Eco-Toxicity	*No data available*
Other adverse effects	*No data available*

13. Disposal Considerations

13.1. Waste treatment methods

Waste from residues / unused products	*Dispose of in accordance with local regulations*
Contaminated packaging	*Dispose of as unused product*

14. Transport information

14.1. UN number, Proper Shipping Name, Transport Hazard Class, packing group

	US DOT	*ADR/RID*	*IATA*	*IMDG*
UN Number *UN proper shipping name*	*Not classified.* *Not hazardous.* *(Genistein)*	*Not classified.* *Not hazardous.* *(Genistein)*	*Not classified.* *Not hazardous.* *(Genistein)*	*Not classified.* *Not hazardous.* *(Genistein)*
Transport Hazard Class & Packing Group	*Not hazardous for transprort.* *Not regulated*	*Not hazardous for transprort.* *Not regulated*	*Not hazardous for transprort.* *Not regulated*	*Not hazardous for transprort.* *Not regulated*

15. Regulatory information

15.1. Safety, health, and environmental regulations/legislation

USA EPA / TSCA	*CAS# 446-72-0 is listed on the TSCA inventory.*
California Proposition 65	*Not listed*
EU ECHA Status	*This product is registered with the **EU ECHA**, Number 207-174-9* ***ANNEX III** (criteria for 1 - 10 tonne registered substances): Listed* ***Reason for listing**: ...likely to meet criteria for category 1A or 1B carcinogenicity, mutagenicity, or reproductive toxicity, or with dispersive or*

	diffuse use(s) where predicted likely to meet any classification criterion for health or environmental hazards, or where there is a nanoform soluble in biological and environmental media. ***REACH**: Preregistered*

16. Other information

16.1. Department issuing this SDS

Quality systems and regulatory affairs

16.2. General Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication.

The information given here is designed only as guidance for safe handling, use, processing, storage, transportation, disposal, and release and is not to be considered a warranty or quality specification.

The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any proces, unless specified in the text.

16.3. The users'/employers' responsibility:

A risk assessment should be performed by the employer/user prior to the use of this product.

All recommendations included in this document, are advisory in nature.

The type of protective equipment must be selected based on the amount and concentration of all dangerous materials being used in the workplace.

16.4. No-Copyright statement

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16.5. Abbreviations and acronyms:

Acute Tox.:	*Acute toxicity*
CAS:	*Chemical Abstracts Service (a division of the American Chemical Society)*
DOT:	*US Department of Transportation*
EINECS:	*European Inventory of Existing Commercial Chemical Substances*
Eye Dam.:	*Serious eye damage/eye irritation*
HSDB	*Hazardous Substances Data Bank*
HMIS:	*Hazardous Materials Identification System (USA)*
IATA:	*International Air Transport Association*
IMDG:	*International Maritime Code for Dangerous Goods*
LC50:	*Lethal concentration, Median*
LD50:	*Lethal dose, Median*
NFPA:	*National Fire Protection Association (USA)*
NIOSH:	*National Institute for Occupational Safety*
OSHA:	*Occupational Safety & Health*
PBT:	*Persistent, Bioaccumulative and Toxic*

PEL:	*Permissible Exposure Limit*
REL:	*Recommended Exposure Limit*
Repr.:	*Reproductive toxicity*
RTECS:	*Registry of Toxic Effects of Chemical Substances*
Skin Irrit:	*Skin corrosion/irritation*
STOT RE:	*Specific target organ toxicity (repeated exposure)*
TLV:	*Threshold Limit Value*
vPvB:	*Very Persistent and Very Bioaccumulative*

16.6. End of SDS