

# Material Safety Data Sheet

## Saffron extract **Saffron'Extr**<sup>®</sup> (*Crocus sativus* L.)

### Section 1: Product and Company Identification

#### 1.1. Product Identification

Saffron'Extr<sup>®</sup> Saffron dry extract with 2 % safranal (DER<sub>nat</sub> 1:1-2; 50 % ethanol v/v)

Botanical source: *Crocus sativus* L.

#### 1.2. Relevant identified uses and non-recommended uses

Possible constituent of

- Aromas and Colorants
- Food and food supplements
- Pharmaceutical products
- Cosmetics

Non-recommended use: None known

#### 1.3. Details on the supplier of the MSDS

Eusano GmbH & Co. KG i.Gr.

Wartbergweg 15

D-86874 Mattsies

Germany

Contact: Dr. Mathias Schmidt

Tel.: +49-82 68 – 90 81 74

Fax: +49-82 68 – 90 81 75

e-mail: [Schmidt@herbresearch.de](mailto:Schmidt@herbresearch.de)

#### 1.4. Emergency Assistance

Toxicological Department

2<sup>nd</sup> Medical Hospital of the Technical University of Munich

Ismaninger Str. 22

D-81675 München, Germany

Tel.: +49-89-19240

e-mail: [tox@Lrz.tum.de](mailto:tox@Lrz.tum.de)

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013

## Section 2: Potential Hazards

### 2.1. Classification

#### Directive 1272/2008/EC

Not classified as a dangerous good

### 2.2. Pictograms according to Directive 1272/2008/EC

No pictogram applicable.

#### Precautionary Statements:

P262:	Avoid contact with eyes, skin or clothes
P270:	Do not eat, drink or smoke when using this product
P280:	Wear protective gloves, protective clothing and eye protection while handling
P305 + P351 + P338:	If in the eyes, rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
P314:	Get medical attention if you feel unwell.
P302 + P352:	If on skin: Wash with plenty of soap and water.
P402 + P404:	Store in a dry place. Store in a closed container.
P410:	Protect from sunlight

### 2.3. Other hazards

None known.

## Section 3: Composition and Information on Constituents

### 3.1. Substances

Mixture

### 3.2. Composition / Indications on ingredients

Saffron dry extract with 2 % safranal, DER<sub>nat</sub> 1 :2-3

Chemical characterisation: Herbal extract, minimum content 2 % safranal

Excipients: 60-75 % maltodextrin

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013

## Section 4: First Aid Measures

### 4.1 Description of first-aid measures

#### General advice:

Remove contaminated clothing. Consult your physician in case of impaired health

#### Inhalation:

Remove to fresh air. Get medical attention if irritation occurs.

#### Skin contact:

Rinse with water. Get medical attention if irritation develops.

#### Eye contact:

Check for and remove contact lenses. Flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

#### Ingestion:

Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. If symptoms of toxicity occur, call a physician.

### 4.2 Most important acute or delayed symptoms or effects

None known.

### 4.3 Requirement for medical aid or special treatments

None known.

## Section 5: Measures for Fire-fighting

### 5.1 Fire-fighting media

#### Suitable fire-fighting media:

Foam, CO<sub>2</sub>, powder.

### 5.2 Specific risks emerging from the substance

None known.

### 5.3 Advice for fire-fighting

Do not use water jet.

## Section 6: Accidental Release Measures

### 6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes and skin.

Protective equipment for fire-fighters: See Section 8.

### 6.2 Measures for environmental protection

Dilute with water. No environmental risks are known. The product is fully biodegradable.

### 6.3 Methods and materials for containment and cleaning

In case of spills use conventional cleaning. Finish cleaning surfaces with water.

### 6.4 Reference to other sections

For protective measures see also Sections 7, 8 and 13.

## Section 7: Handling and Storage

### 7.1 Precautionary measures for safe handling

#### Advice for safe handling:

Keep away from heat.

Do not eat, drink or smoke during handling.

### 7.2 Conditions for safe storage and avoiding incompatibilities

Store in the original container. Keep container tightly closed.

Store at room temperature in a well-ventilated area with protection from light.

Avoid significant temperature variations in the storage area.

Recommended storage temperature: Ambient temperature.

Do not re-use the empty containers.

### 7.3 Specific end uses

As an ingredient for pharmaceutical, food or cosmetic products.

## Section 8: Limitation and Control of Exposure / Personal Protective Equipment

### 8.1 Parameters for monitoring

None known. No limit concentrations for exposure have been defined.

### 8.2 Limitation and monitoring of exposure / Personal protective equipment

#### Technical protective measures:

Handle in a well-ventilated area.

#### Personal protective equipment:

Ocular protection: Wear standard laboratory safety glasses.

Skin protection: Wear standard lab coat and approved gloves. In case of spills remove contaminated clothing.

## Section 9: Physical and Chemical Properties

### 9.1 Physical and chemical properties and appearance

**Physical state and appearance:** Dry powder.

**Odour:** Spicy, woody, typical of saffron

**Colour:** Brightly orange

**Solubility:** Fully soluble in water and ethanol-water mixtures.

#### Data relevant for safety:

**Explosion hazard:** The product is not explosive. Powders of organic substances can form explosive mixtures with air.

No known risk of explosion in the presence of mechanical impact.

No known risk of explosion in the presence of static discharge.

**Ignition point:** Not available.

**Auto-ignition temperature:** Not available.

**Flash-point:** Not available.

**Melting point:** Not applicable.

**Boiling point:** Not applicable.

**Relative density:** Not available.

**Vapour pressure:** Not applicable

**Volatility:** Not available

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013

## 9.2 Other indications

No other data on physical/chemical stability are available.

## Section 10: Stability and Reactivity Data

### 10.1 Reactivity

Incompatibilities with container materials or other substances have not been observed. The product is non-corrosive.

### 10.2 Chemical stability

Under usual storage conditions the product is expected to be stable for at least 18 months starting from delivery.

### 10.3 Possibility of dangerous reactions

No dangerous reactions are to be expected upon intended use.

### 10.4 Conditions to be avoided

None known.

### 10.5 Incompatible materials

None known.

### 10.6 Dangerous degradation products

None known.

## Section 11: Toxicological Information

### 11.1 Toxicological effects

#### Acute toxicity

Toxicological testing is not available for the specific product.

Saffron and saffron extracts were found to have a very low or even non-existent toxicity in *in vivo* studies in animals (1-3). Daily doses of up to 1.5 g of saffron are generally considered safe.

Descriptions of adverse effects of saffron are mostly found in the older literature (prior to 1925). According to these sources, nausea and revulsion was described with doses between 1.2 g and 2 g – followed by vomiting, uterine bleeding, haematuria, bleeding of the

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013

gastrointestinal mucosas, vertigo and dizziness. In some cases the ingestion of 4 g of saffron per day for several days did not cause any adverse events, whereas this same dose was reported lethal in other cases. This striking discrepancy might be due to the causative agent in the reports of adverse events not being saffron, but rather a toxic substitution such as “meadow saffron”, *Colchicum autumnale*.

## **Irritation**

Not observed.

## **Sensitisation**

The risk of sensitisation to saffron is very low (4;5). Only one case of an anaphylactic reaction to saffron stigmas has been reported (6).

## **Repeat-dose toxicity**

Not observed.

## **Carcinogenicity**

Not observed.

## **Mutagenicity**

Not observed.

## **Reproduction toxicity**

Not observed.

## **Further comments on toxicity**

According to the long-standing experience with saffron as a food ingredient, toxicity is not to be expected.

- (1) Nair SC, Kurumboor SK, Hasegawa JH. Saffron chemoprevention in biology and medicine: a review. *Cancer Biother* 1995; 10(4):257-264.
- (2) Karimi G, Hosseinzadeh H, Khaleghpanah P. Study of antidepressant effect of aqueous and ethanolic extracts of *Crocus sativus* in mice. *Iranian Basic Med Sci* 2001; 4:11-15.
- (3) Madaus G. *Crocus*. Echter Safran, Iridaceae. *Lehrbuch der biologischen Heilmittel*. Leipzig, Ravensburg: mediamed Verlag, 1938: 1122-1128.
- (4) Lucas CD, Hallagan JB, Taylor SL. The role of natural color additives in food allergy. *Adv Food Nutr Res* 2001; 43:195-216.
- (5) Moneret-Vautrin DA, Morisset M, Lemerdy P, Croizier A, Kanny G. Food allergy and IgE sensitization caused by spices: CICBAA data (based on 589 cases of food allergy). *Allerg Immunol (Paris)* 2002; 34(4):135-140.
- (6) Wüthrich B, Schmid-Grendelmeyer P, Lundberg M. Anaphylaxis to saffron. *Allergy* 1997; 52(4):476-477.

## Section 12: Environmental Information

### 12.1 Toxicity

No information is available on ecotoxic effects or biodegradation products. With regular handling no ecotoxic risk is to be expected.

### 12.2 Persistency and degradability

The product is fully biodegradable.

### 12.3 Potential for bioaccumulation

None.

### 12.4 Intra-soil mobility

Not applicable.

### 12.5 Persistent, bioaccumulative and toxic substances (PBT) and Very persistent, very bioaccumulative substances (vPvB)

Not applicable.

### 12.6 Other hazardous effects

Not applicable.

## Section 13: Disposal Information

### 13.1 Procedure of waste treatment

Empty storage containers can be cleaned with water. Waste and containers must be disposed of in accordance with regulations for household waste. For residual quantities of the product destruction by incineration is recommended.

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013



## Section 14: Transport Information

### 14.1 UN-Number

Not classified: not a dangerous good

### 14.2 Regular UN shipping label

ADR (Street)/RID (Railway): no restriction  
 IMDG-Code (Maritime transport): No restriction  
 ICAO-TI / IATA-DGR (Air freight): no restriction

### 14.3 Transport hazard class

ADR / RID /IMDG-Code / ICAO-TI / IATA-DGR

Class 3

### 14.4 Packaging class

III (Substances with minor hazard)

### 14.5 Environmental risk

#### Labelling of substances with environmental hazards

ADR / RID / IMDG-Code: no

ICAO-TI / IATA-DGR: no

### 14.6 Specific precautions for users

See sections 6-8.

### 14.7 Mass transport according to Annex II of the MARPOL agreement 73/78 and according to IBC code

Shipment is exclusively made in individual containers suitable and admissible for transport.

Eusano GmbH & Co. KG  
 Wartbergweg 15  
 D-86874 Mattsies  
 Tel : +49-8268-9081-74  
 Fax : +49-8268-9081-75  
 E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
 Amtsgericht Memmingen  
 HRA 12294  
 St.-Nr. : beantragt  
 USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
 Eusano Verwaltungs GmbH  
 Sitz: Tussenhausen  
 Amtsgericht Memmingen  
 HRB 15184  
 Geschäftsführer:  
 Dr. Mathias Schmidt

Raiffeisenbank  
 Tussenhausen  
 BLZ 701 695 75  
 Kto. 9028013  
 BIC : GENODEF1TRH  
 IBAN: DE 11  
 701695750009028013

## Section 15: Legal Information

### 15.1 Directives on safety, health and environmental protection / Specific legal requirements for the substance

#### EU-Directives

##### Directive 1005/2009/EC on substances that deplete the ozone layer:

Not applicable

##### Directive 850/2004/EC on persistent organic pollutants:

Not applicable

##### Directive 689/2008/EC on the export and import of dangerous chemicals:

Not applicable

##### Directive 648/2004/EC on on detergents:

Not applicable

##### Restrictions according to Title VIII of Directive 1907/2006/EC:

None

#### National Directives

##### Water hazard class:

WGK 1 (weak hazard; self-assessment)

##### Reference to technical regulations for hazardous substances (TRGS)

Protective measures according to TRGS 500

Storage class according to TRGS 510: No restrictions

##### Directive on solvents (31. BImSchV)

Not applicable

### 15.2 Safety assessment

The product has not been subject of a safety assessment.

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013

## Section 16: Other Information

Last updated: 12 July 2012

The information 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 event shall Eusano GmbH & Co. KG i.Gr. 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 Eusano GmbH & Co. KG i.Gr. has been advised of the possibility of such damages.

---

Eusano GmbH & Co. KG  
Wartbergweg 15  
D-86874 Mattsies  
Tel : +49-8268-9081-74  
Fax : +49-8268-9081-75  
E-Mail : [info@eusano.com](mailto:info@eusano.com)  
[www.eusano.com](http://www.eusano.com)

Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRA 12294  
St.-Nr. : beantragt  
USt.-Id.-Nr : beantragt

Pers. haftende Gesellschafterin:  
Eusano Verwaltungs GmbH  
Sitz: Tussenhausen  
Amtsgericht Memmingen  
HRB 15184  
Geschäftsführer:  
Dr. Mathias Schmidt

Raiffeisenbank  
Tussenhausen  
BLZ 701 695 75  
Kto. 9028013  
BIC : GENODEF1TRH  
IBAN: DE 11  
701695750009028013