

## SAFETY DATA SHEET

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## Safety Data Sheet

### SECTION 1. Identification of the substance/mixture and of the company/undertaking

#### 1.1. Product identifier

Product name Raphael Art Pigments Grüne Erde Vagone

#### 1.2. Relevant identified uses of the substance or mixture and uses advised against

Intended use Dispersible pigment in aqueous solution, oils and resins

#### 1.3. Details of the supplier of the safety data sheet

Name Deffner & Johann GmbH  
Full address Mühlackerstr. 13, 97520 Rötthlein  
District and Country Germany  
tel.004909723 9350-0

#### e-mail address

info@deffner-johann.de

#### 1.4. Emergency telephone number

tel.004909723 9350-0 Hours:8.00-12.00/14.00-15.00)

### SECTION 2. Hazards identification

#### 2.1. Classification of the substance or mixture

The product is not classified as hazardous pursuant to the provisions set forth in EC Regulation 1272/2008 (CLP). However, since the product contains hazardous substances in concentrations such as to be declared in section no. 3, it requires a safety data sheet with appropriate information, compliant to (EU) Regulation 2015/830.

Hazard classification and indication: Not classified.

#### 2.2. Label elements

Hazard labelling pursuant to EC Regulation 1272/2008 (CLP) and subsequent amendments and supplements.

Hazard pictograms: --

Signal words: --

Hazard statements:

EUH032 Contact with acids liberates very toxic gas.  
EUH210 Safety data sheet available on request.

Precautionary statements:

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#### 2.3. Other hazards

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

## SECTION 3. Composition/information on ingredients

### 3.1. Substances

Information not relevant

### 3.2. Mixtures

Contains:

Identification	x = Cone. %	Classification 1272/2008 (CLP)
Bentonite		
CAS 1302-78-9	$50 \leq x < 55$	Substance with a community workplace exposure limit.
EC 215-108-5		
INDEX -		
Calcium Solphate		
CAS 7778-18-9	$30 \leq x < 35$	Substance with a community workplace exposure limit.
EC 231-900-3		
INDEX -		
Yellow iron oxide		
CAS 51274-00-1	$5 \leq x < 6,5$	Substance with a community workplace exposure limit.
EC 257-098-5		
INDEX -		
Black iron oxide		
CAS 1317-61-9	$2 \leq x < 3$	Substance with a community workplace exposure limit.
EC 215-277-5		
INDEX -		
Ammonium iron (3+) hexakis (cyano-C) ferrate (4-)		
CAS 25869-00-5	$1 \leq x < 2$	Aquatic Chronic 4 H413, EUH032
EC 247-304-1		
INDEX -		
Reg. no. 01-2119555296-32-0000		

The full wording of hazard (H) phrases is given in section 16 of the sheet.

## SECTION 4. First aid measures

### 4.1. Description of first aid measures

EYES: Remove contact lenses, if present. Wash immediately with plenty of water for at least 15 minutes, opening the eyelids fully. If problem persists, seek medical advice.

SKIN: Remove contaminated clothing. Rinse skin with a shower immediately. Get medical advice/attention immediately. Wash contaminated clothing before using it again.

INHALATION: Remove to open air. If the subject stops breathing, administer artificial respiration. Get medical advice/attention immediately.

INGESTION: Get medical advice/attention immediately. Do not induce vomiting. Do not administer anything not explicitly authorised by a doctor.

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

Specific information on symptoms and effects caused by the product are unknown.

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

Follow doctor's orders.

## SECTION 5. Firefighting measures

### 5.1. Extinguishing media

#### SUITABLE EXTINGUISHING EQUIPMENT

The extinguishing equipment should be of the conventional kind: carbon dioxide, foam, powder and water spray.

#### UNSUITABLE EXTINGUISHING EQUIPMENT

None in particular.

### 5.2. Special hazards arising from the substance or mixture

#### HAZARDS CAUSED BY EXPOSURE IN THE EVENT OF FIRE

Do not breathe combustion products.

### 5.3. Advice for firefighters

#### GENERAL INFORMATION

Use jets of water to cool the containers to prevent product decomposition and the development of substances potentially hazardous for health. Always wear full fire prevention gear. Collect extinguishing water to prevent it from draining into the sewer system. Dispose of contaminated water used for extinction and the remains of the fire according to applicable regulations.

#### SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS

Normal firefighting clothing i.e. fire kit (BS EN 469), gloves (BS EN 659) and boots (HO specification A29 and A30) in combination with self-contained open circuit positive pressure compressed air breathing apparatus (BS EN 137).

## SECTION 6. Accidental release measures

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

If there are no contraindications, spray powder with water to prevent the formation of dust.

Wear suitable protective equipment (including personal protective equipment referred to under Section 8 of the safety data sheet) to prevent any contamination of skin, eyes and personal clothing. These indications apply for both processing staff and those involved in emergency procedures.

### 6.2. Environmental precautions

The product must not penetrate into the sewer system or come into contact with surface water or ground water.

### 6.3. Methods and material for containment and cleaning up

Collect the leaked product and place it in containers for recovery or disposal. If there are no contraindications, use jets of water to eliminate product residues.

Make sure the leakage site is well aired. Evaluate the compatibility of the container to be used, by checking section 10. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

### 6.4. Reference to other sections

Any information on personal protection and disposal is given in sections 8 and 13.

### SECTION 7. Handling and storage

#### 7.1. Precautions for safe handling

Avoid contact with eyes and skin. Do not breathe powders, vapours or mists. Do not eat, drink or smoke during use. Wash hands after use. Avoid leakage of the product into the environment.

#### 7.2. Conditions for safe storage, including any incompatibilities

Keep only in the original container. Keep the containers tightly closed. Keep the product in clearly labeled containers. Keep containers away from incompatible materials, checking section 10.

#### 7.3. Specific end use(s)

See section 1.2.

### SECTION 8. Exposure controls/personal protection

#### 8.1. Control parameters

Regulatory References:

EU	TLV-ACGIH RCP TLV	ACGIH 2017 ACGIH TLVs and BEIs – Appendix H
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#### Bentonite

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
RCP TLV		3				INHAL
RCP TLV		10				RESP

#### Calcium Solphate

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
TLV-ACGIH		10				INHAL

#### Yellow iron oxide

##### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
OEL	EU	10				INHAL
OEL	EU	3				RESP

#### Health - Derived no-effect level - DNEL / DMEL

Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Chronic local	Acute local	Acute systemic	Chronic systemic
Inhalation							10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

### Black iron oxide

#### Threshold Limit Value

Type	Country	TWA/8h		STEL/15min		
		mg/m <sup>3</sup>	ppm	mg/m <sup>3</sup>	ppm	
RCP TLV		10				INHAL
RCP TLV		3				RESP

  

Health - Derived no-effect level - DNEL / DMEL								
Route of exposure	Effects on consumers				Effects on workers			
	Acute local	Acute systemic	Chronic local	Chronic systemic	Chronic local	Acute local	Acute systemic	Chronic systemic
Inhalation							10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup>

#### Legend:

(C) = CEILING ; INHAL = Inhalable Fraction ; RESP = Respirable Fraction ; THORA = Thoracic Fraction.

VND = hazard identified but no DNEL/PNEC available ; NEA = no exposure expected ; NPI = no hazard identified.

During the risk assessment process, it is essential to take into consideration the ACGIH occupational exposure levels for inert particulate not otherwise classified (PNOC respirable fraction: 3 mg/m<sup>3</sup>; PNOC inhalable fraction: 10 mg/m<sup>3</sup>). For values above these limits, use a P type filter, whose class (1, 2 or 3) must be chosen according to the outcome of risk assessment.

### 8.2. Exposure controls

As the use of adequate technical equipment must always take priority over personal protective equipment, make sure that the workplace is well aired through effective local aspiration.

When choosing personal protective equipment, ask your chemical substance supplier for advice.

Personal protective equipment must be CE marked, showing that it complies with applicable standards.

If the product may or must come into contact or react with acids, suitable technical and/or organisational measures should be taken to prevent the development of toxic and/or inflammable gases.

#### HAND PROTECTION

In the case of prolonged contact with the product, protect the hands with penetration-resistant work gloves (see standard EN 374).

Work glove material must be chosen according to the use process and the products that may form. Latex gloves may cause sensitivity reactions.

#### SKIN PROTECTION

Wear category I professional long-sleeved overalls and safety footwear (see Directive 89/686/EEC and standard EN ISO 20344). Wash body with soap and water after removing protective clothing.

#### EYE PROTECTION

Wear airtight protective goggles (see standard EN 166).

#### RESPIRATORY PROTECTION

Use a type P filtering facemask, whose class (1, 2 or 3) and effective need, must be defined according to the outcome of risk assessment (see standard EN 149).

#### ENVIRONMENTAL EXPOSURE CONTROLS

The emissions generated by manufacturing processes, including those generated by ventilation equipment, should be checked to ensure compliance with environmental standards.

## SECTION 9. Physical and chemical properties

Appearance	powder
9.1. Information on basic physical and chemical properties	
Colour	green
Odour	no odour
Odour threshold	Not available
PH	not applicable
Melting point / freezing point	not applicable
Initial boiling point	not applicable
Boiling range	not applicable
Flash point	Not inflammable.
Evaporation Rate	not applicable
Flammability of solids and gases	Not inflammable.
Lower inflammability limit	Not inflammable.
Upper inflammability limit	Not inflammable.
Lower explosive limit	Not explosive.
Upper explosive limit	Not explosive.
Vapour pressure	not applicable
Vapour density	not applicable
Relative density	Not available
Solubility	Insoluble in water
Partition coefficient: n-octanol/water	not applicable
Auto-ignition temperature	Not self-igniting.
Decomposition temperature	Not available
Viscosity	not applicable
Explosive properties	Not explosive.
Oxidising properties	Not available

### 9.2. Other information

No other information.

## SECTION 10. Stability and reactivity

### 10.1. Reactivity

There are no particular risks of reaction with other substances in normal conditions of use.

### 10.2. Chemical stability

The product is stable in normal conditions of use and storage.

### 10.3. Possibility of hazardous reactions

With acids liberates a highly toxic gas.

### 10.4. Conditions to avoid

Avoid environmental dust build-up.

### 10.5. Incompatible materials

Avoid the contact with acids.

### 10.6. Hazardous decomposition products

In the event of thermal decomposition or fire, vapours potentially dangerous to health may be released.

## SECTION 11. Toxicological information

In the absence of experimental data for the product itself, health hazards are evaluated according to the properties of the substances it contains, using the criteria specified in the applicable regulation for classification.

It is therefore necessary to take into account the concentration of the individual hazardous substances indicated in section 3, to evaluate the toxicological effects of exposure to the product.

### 11.1. Information on toxicological effects

#### Metabolism, toxicokinetics, mechanism of action and other information

No data available.

#### Information on likely routes of exposure

No data available.

#### Delayed and immediate effects as well as chronic effects from short and long-term exposure

No data available.

#### Interactive effects

No data available.

#### ACUTE TOXICITY

LC50 (Inhalation) of the mixture: Not classified (no significant component)

LD50 (Oral) of the mixture: Not classified (no significant component)

LD50 (Dermal) of the mixture: Not classified (no significant component)

Yellow iron oxide

LD50 (Oral) > 10000 mg/kg Rat

LC50 (Inhalation) > 195 mg/m<sup>3</sup>/6h Rat

Black iron oxide

LD50 (Oral) > 5000 mg/kg Rat

Calcium sulphate

LD50 (Oral) > 1581 mg/kg Rat

LC50 (Inhalation) > 2,61 mg/l Rat

Ammonium iron (3+) hexakis (cyano-C) ferrate (4-)

LD50 (Oral) 5000 mg/kg Rat female

LD50 (Dermal) > 2000 mg/kg Rat

Bentonite

LD50 (Oral) > 2000 mg/kg bw Rat

LC50 (Inhalation) > 5,27 mg/l Rat

#### SKIN CORROSION / IRRITATION

Does not meet the classification criteria for this hazard class



SERIOUS EYE DAMAGE / IRRITATION

Does not meet the classification criteria for this hazard class

RESPIRATORY OR SKIN SENSITISATION

Does not meet the classification criteria for this hazard class

GERM CELL MUTAGENICITY

Does not meet the classification criteria for this hazard class

CARCINOGENICITY

Does not meet the classification criteria for this hazard class

REPRODUCTIVE TOXICITY

Does not meet the classification criteria for this hazard class

STOT - SINGLE EXPOSURE

Does not meet the classification criteria for this hazard class

STOT - REPEATED EXPOSURE

Does not meet the classification criteria for this hazard class

ASPIRATION HAZARD

Does not meet the classification criteria for this hazard class

**SECTION 12. Ecological information**

No specific data are available for this product. Handle it according to good working practices. Avoid littering. Do not contaminate soil and waterways. Inform the competent authorities, should the product reach waterways or contaminate soil or vegetation. Please take all the proper measures to reduce harmful effects on aquifers.

**12.1. Toxicity****Bentonite**

LC50 (sea water fish): 2800-3200 mg / l / 24h (black bass, low warmouth, blue gills and sunfish)

EC50 (freshwater invertebrates): 81.6 mg / l / 96h (dungeness crab)

EC50 (freshwater invertebrates): 24.8 mg / l / 96h (dock shrimp).

LC50 (sea water fish) > 500 mg / l / 24h (C. dubia and H. limbata)

EC50 (freshwater algae) > 100 mg / l

EC50 (Crustaceans) > 100 mg / l Daphnia magna.

EC50 (Algae / Aquatic Plants) 16000 mg/l/72h Rainbow trout

**Yellow iron oxide**

LC50 - for Fish > 100000 mg/l/96h Danio rerio

EC50 - for Crustacea > 100 mg/l/48h Daphnia magna

Black iron oxide

LC50 - for Fish > 10000 mg/l/96h Danio Rerio  
EC50 - for Crustacea > 100000 mg/l/48h Daphnia Magna

Ammonium iron (3+) hexakis (cyano-C) ferrate (4-)

LC50 - for Fish > 100 mg/l/96h Cyprinus carpio  
EC50 - for Crustacea > 500 mg/l/24h Daphnia Magna  
EC50 - for Algae / Aquatic Plants 9,7 mg/l/72h Pseudokirchneriella subcapitata  
EC10 for Crustacea > 100 mg/l bacteria  
Chronic NOEC for Fish 100 mg/l/3h Bacteria  
Chronic NOEC for Crustacea 100 mg/l/24h Daphnia magna  
Chronic NOEC for Crustacea 0.142 mg/l/21d daphnia magna  
Chronic NOEC for Algae / Aquatic Plants 8 mg/l Pseudokirchneriella subcapitata

#### 12.2. Persistence and degradability

Black iron oxide  
Solubility in water < 0,001 mg/l

#### 12.3. Bioaccumulative potential.

No data available.

#### 12.4. Mobility in soil.

No data available.

#### 12.5. Results of PBT and vPvB assessment.

On the basis of available data, the product does not contain any PBT or vPvB in percentage greater than 0,1%.

#### 12.6. Other adverse effects.

No data available.

## SECTION 13. Disposal considerations

#### 13.1. Waste treatment methods

Reuse, when possible. Neat product residues should be considered special non-hazardous waste.  
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.  
CONTAMINATED PACKAGING  
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

## SECTION 14. Transport information

The product is not dangerous under current provisions of the Code of International Carriage of Dangerous Goods by Road (ADR) and by Rail (RID), of the International Maritime Dangerous Goods Code (IMDG), and of the International Air Transport Association (IATA) regulations.

#### 14.1. UN number

Not applicable

**14.2. UN proper shipping name**

Not applicable

**14.3. Transport hazard class(es)**

Not applicable

**14.4. Packing group**

Not applicable

**14.5. Environmental hazards**

Not applicable

**14.6. Special precautions for user**

Not applicable

**14.7. Transport in bulk according to Annex II of Marpol and the IBC Code**

Information not relevant

## SECTION 15. Regulatory information

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

Seveso Category - Directive 2012/18/EC: None

Restrictions relating to the product or contained substances pursuant to Annex XVII to EC Regulation 1907/2006

None

Substances in Candidate List (Art. 59 REACH)

On the basis of available data, the product does not contain any SVHC in percentage greater than 0,1%.

Substances subject to authorisation (Annex XIV REACH)

None

Substances subject to exportation reporting pursuant to fECI Reg. 649/2012:

None

Substances subject to the Rotterdam Convention:

None

Substances subject to the Stockholm Convention:

None

Healthcare controls

Information not available

15.2. Chemical safety assessment

No chemical safety assessment has been processed for the mixture and the substances it contains.

## SECTION 16. Other information

Text of hazard (H) indications mentioned in section 2-3 of the sheet:

<b>Aquatic Chronic 4</b>	May cause long-term adverse effects in aquatic environments, category 4
<b>EUH032</b>	Contact with acids liberates very toxic gas.
<b>EUH210</b>	Safety data sheet available on request.

### LEGEND:

- ADR: European Agreement concerning the carriage of Dangerous goods by Road
- CAS NUMBER: Chemical Abstract Service Number
- CE50: Effective concentration (required to induce a 50% effect)
- CE NUMBER: Identifier in ESIS (European archive of existing substances)
- CLP: EC Regulation 1272/2008
- DNEL: Derived No Effect Level
- EmS: Emergency Schedule
- GHS: Globally Harmonized System of classification and labeling of chemicals
- IATA DGR: International Air Transport Association Dangerous Goods Regulation
- IC50: Immobilization Concentration 50%
- IMDG: International Maritime Code for dangerous goods
- IMO: International Maritime Organization
- INDEX NUMBER: Identifier in Annex VI of CLP
- LC50: Lethal Concentration 50%
- LD50: Lethal dose 50%
- OEL: Occupational Exposure Level
- PBT: Persistent bioaccumulative and toxic as REACH Regulation
- PEC: Predicted environmental Concentration
- PEL: Predicted exposure level
- PNEC: Predicted no effect concentration
- REACH: EC Regulation 1907/2006
- RID: Regulation concerning the international transport of dangerous goods by train
- TLV: Threshold Limit Value
- TLV CEILING: Concentration that should not be exceeded during any time of occupational exposure.
- TWA STEL: Short-term exposure limit
- TWA: Time-weighted average exposure limit
- VOC: Volatile organic Compounds
- vPvB: Very Persistent and very Bioaccumulative as for REACH Regulation
- WGK: Water hazard classes (German).

### GENERAL BIBLIOGRAPHY

1. Regulation (EC) 1907/2006 (REACH) of the European Parliament
2. Regulation (EC) 1272/2008 (CLP) of the European Parliament
3. Regulation (EU) 790/2009 (I Atp. CLP) of the European Parliament
4. Regulation (EU) 2015/830 of the European Parliament
5. Regulation (EU) 286/2011 (II Atp. CLP) of the European Parliament
6. Regulation (EU) 618/2012 (III Atp. CLP) of the European Parliament
7. Regulation (EU) 487/2013 (IV Atp. CLP) of the European Parliament
8. Regulation (EU) 944/2013 (V Atp. CLP) of the European Parliament
9. Regulation (EU) 605/2014 (VI Atp. CLP) of the European Parliament
10. Regulation (EU) 2015/1221 (VII Atp. CLP) of the European Parliament
11. Regulation (EU) 2016/918 (VIII Atp. CLP) of the European Parliament
12. Regulation (EU) 2016/1179 (IX Atp. CLP)

### 13. Regulation (EU) 2017/776 (X Atp. CLP)

- The Merck Index. - 10th Edition
- Handling Chemical Safety
- INRS - Fiche Toxicologique (toxicological sheet)
- Patty - Industrial Hygiene and Toxicology
- N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition
- IFA GESTIS website
- ECHA website
- Database of SDS models for chemicals - Ministry of Health and ISS (Istituto Superiore di Sanita) - Italy

#### Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product.

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Provide appointed staff with adequate training on howto use chemical products.