SAFETY DATA SHEET

Version 3.7
Revision Date 02/26/2015
Print Date 11/13/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Activated charcoal

Product Number : 05105
Brand : Sigma-Aldrich

CAS-No. : 7440-44-0

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Combustible dust,

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram none

Signal word Warning

Hazard statement(s)
May form combustible dust concentrations in air

Precautionary statement(s) none

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Combustible dust

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Charcoal activated

Formula : C
Molecular weight : 12.01 g/mol
CAS-No. : 7440-44-0
EC-No. : 231-153-3

No components need to be disclosed according to the applicable regulations.

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration.

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: black
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available

e)	Melting point/freezing point	Melting point/range: 3,550 °C (6,422 °F)
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	May form combustible dust concentrations in air
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	1 hPa (1 mmHg) at 25 °C (77 °F)
l)	Vapour density	No data available
m)	Relative density	1.8 - 2.1 g/cm3
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intravenous - Mouse - 440 mg/kg

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

Reproductive toxicity - Rat - Subcutaneous
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Activated Carbon Not Tansportation Regulated	7440-44-0	

New Jersey Right To Know Components

	CAS-No.	Revision Date
Activated Carbon Not Tansportation Regulated	7440-44-0	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

May form combustible dust concentrations in air

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.7 Revision Date: 02/26/2015 Print Date: 11/13/2015

TED PELLA, INC.
Microscopy Products for Science and Industry

Material Safety Data Sheet

Product No. 15701-1 through 15714-20 Colloidal Gold, 2, 5, 10, 15, 20, 30, 40, 50, 60, 80, 100, 150, 200, and 250nm
Issue Date (02-11-05)
Review Date (04-12-12)

Section 1: Product and Company Identification

Product Name: Colloidal Gold

Synonym: Burnish gold, C.I. 77480, C.I. Pigment metal 3, Colloidal gold, Gold flake, Gold powder, Magnesium gold purple, Shell gold. The synonyms supplied are for a closely related compound. Non biological in nature.
Manufacture: BB International Ltd

Company Name
Ted Pella, Inc., P.O. Box 492477, Redding, CA 96049-2477
Domestic Phone (800) 237-3526 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
International Phone (01) (530) 243-2200 (Mon-Thu. 6:00AM to 4:30PM PST; Fri 6:00AM to 4:00PM PST)
Chemtrec Emergency Number 1-800-424-9300 24 hrs a day.

Section 2: Composition / Information on Ingredients

Principle Hazardous Component(s) (chemical and common name(s)) (Cas. No)	%	OSHA PEL mg/m3	ACGIH TLV mg/m3	NTP	IARC	OSHA regulated
Colloidal gold (7440-57-5)	0.001-0.01	No	No	No	No	No

Section 3: Hazard Identification

Emergency overview

Appearance: Liquid, colorless, pale yellow, red or purple.
Immediate effects: Avoid contact and inhalation.

Potential health effects

Primary Routes of entry: NIF
Signs and Symptoms of Overexposure: Exposure to gold compounds can cause contact dermatitis. The toxicological properties have not been thoroughly investigated. The data supplied are for a closely related compound.
Eyes: May cause irritation.
Skin: May be harmful by skin absorption.
Ingestion: May be harmful by ingestion
Inhalation: May be harmful by inhalation.
Chronic Exposure: ND
Chemical Listed As Carcinogen Or Potential Carcinogen: No

See Toxicological Information (Section11)
Potential environmental effects
See Ecological Information (Section 12)

Section 4: First Aid Measures
If accidental overexposure is suspected
Eye(s) Contact: In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.
Skin Contact: In case of skin contact, flush with copious amounts of water for at least 15 minutes.
Inhalation: If inhaled, remove to fresh air. If breathing becomes difficult, call a physician.
Ingestion: If swallowed, wash out mouth with water provided that person is conscious. Call a physician.
Note to physician
Treatment: ND
Medical Conditions generally Aggravated by Exposure: ND

Section 5: Fire Fighting Measures
Flash Point: NA
Flammable Limits: NA
Auto-ignition point: NA
Fire Extinguishing Media: Water spray. Carbon dioxide, dry chemical powder or appropriate foam.
Special Fire Fighting Procedures: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes
Unusual Fire and Explosion Hazards: Emits toxic fumes under fire conditions.
Hazardous combustion products: ND
DOT Class: None

Section 6: Accidental Release Measures
Steps to be Taken in Case Material is Released or Spilled: Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves. Absorb on sand or vermiculite and place in closed containers for disposal. Ventilated area and wash spill site after material pickup is complete.
Waste Disposal Methods: Dispose of waste according to Federal, State and Local Regulations.

Section 7: Handling and Storage
Precautions to be Taken in Handling and Storage: See section 8
Storage temperature: **Do not freeze.**
Storage Pressure: NA

Section 8: Exposure Controls / Personal Protection
Engineering Controls
Ventilation required: Mechanical exhaust.
Personal Protection Equipment

Respiratory protection: Wear appropriate NIOSH/MSHA approved respirator.
Protective gloves: Chemical resistant gloves.
Skin protection: Wear protective clothing.
Eye protection: Wear safety goggles or face shield
Additional clothing and/or equipment: ND

Exposure Guidelines

See Composition/Information on Ingredients (Section2)

Section 9 Physical and Chemical Properties

Appearance and Physical State: Liquid, colorless, pale yellow, red or purple
Odor (threshold): None
Specific Gravity (H_2O=1): ND
Vapor Pressure (mm Hg): ND
Vapor Density (air=1): ND
Percent Volatile by volume: ND

Evaporation Rate (butyl acetate=1): As water.
Boiling Point: As water.
Freezing point / melting point: As water
pH: 5 to 10
Solubility in Water: Aqueous solution
Molecular Weight: NA

Section 10: Stability and Reactivity

Stability: Stable
Conditions to Avoid: Freezing
Materials to Avoid (Incompatibility): Contact with salt will cause precipitation of colloid.
Hazardous Decomposition Products: Carbon dioxide and carbon monoxide.
Hazardous Polymerization: Will not occur

Section 11: Toxicological Information

Results of component toxicity test performed: RTECS data supplied are for a closely related compound. RTECS number: MD5070000, Gold
Target Organ Data:
Lungs, thorax or respiration (acute pulmonary oedema)
Lungs, thorax or respiration (Dyspnea)
Tumorigenic (equivocal tumorigenic agent by RTECS criteria)
Tumorigenic (tumors at site of application)
Only selected registry of toxic effects of chemical substances is presented here.
See actual entry in RTECS for complete information.
Human experience: ND
This product **does not** contain any compounds listed by NTP or IARC or regulated by OSHA as a carcinogen.

Section 12: Ecological Information

Ecological Information: ND

Chemical Fate Information: ND

Section 13 Disposal Considerations

RCRA 40 CFR 261 Classification: NIF. Contact a licensed waste disposal service to dispose of this material. Licensed Waste Disposal: Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Federal, State and local laws governing disposal of materials can differ. Ensure proper disposal compliance with proper authorities before disposal.

Section 14: Transportation Information

US DOT Information: Proper shipping name: Not regulated
Hazard Class: None
Packaging group: None
UN Number: None
Limitations: None
IATA: Proper shipping name: Not regulated
Hazard Class: None
Packing group: None
UN Number: None
Limitations: None
Domestic shipments only: NA
IMO: Proper shipping name: Not regulated
Class: None
UN Number: None
Packing group: None
EMS: ND
MFAG: ND
Marine Pollutant: No
Canadian TDG: ND
IMDG Page: ND
Limitations: ND

Section 15: Regulatory Information

United States Federal Regulations

MSDS complies with OSHA's Hazard Communication Rule 29, CFR 1910.1200.
SARA Title III: None
RCRA: None
TSCA: EPA TSCA section 8 (B) Chemical Inventory
EPA TSCA section 8 (D) Unpublished health / safety studies
EPA TSCA test submission (TSCATS) data base, September 1997.
CERCLA: No RQ

State Regulations

California Proposition 65: None

International Regulations

Canada WHMIS: ND

Europe EINECS Numbers: EC NO: 231-165-9
TLV and source
RTECS data and synonyms supplied are for a closely related compound.
Reviews, standards and regulations
OEL = MAK
NOHS 1974: HZD T0367; NIS 2; TNF 80; NOS 2; TNE 174
NOHS 1974: HZD 35455; NIS 18; TNF 1230; NOS 25; TNE 9464
NOES 1983: HZD X2971; NIS 1; TNF 3; NOS1; TNE 6
NOES 1983: HZD X7506; NIS 4; TNF 225; NOS 10; TNE 2626; TFE 108
NOES 1983: HZD 35455; NIS 27; TNF 2595; NOS39; TNE 30128; TFE 5425

Section 16: Other Information
Label Information: Avoid contact and inhalation.
European Risk and Safety Phrases: NIF
European symbols needed: NIF
Canadian WHMIS Symbols: NIF
HMIS® Hazard Rating: Health: **1**; Fire: **0**; Physical Hazard: **0**; Personal Protection: See Section 8
(0=least, 1=Slight, 2=Moderate, 3=High, 4=Extreme)
Abbreviations used in this document
NE= Not established
NA= Not applicable
NIF= No Information Found
ND= No Data

Disclaimer
Ted Pella, Inc. makes no warranty of any kind regarding the information furnished herein. Users should independently determine the suitability and completeness of information from all sources. While this data is presented in good faith and believed to be accurate, it should be considered only as a supplement to other information gathered by the user. It is the User's responsibility to assure the proper use and disposal of these materials as well as the safety and health of all personnel who may work with or otherwise come in contact with these materials.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 04/28/2014 Version 1. 3

SECTION 1.Identification

Product identifier

Product number	107022
Product name	2-Propanol for analysis EMPARTA® ACS
Synonyms	IPA, iPrOH
CAS-No.	67-63-0

Relevant identified uses of the substance or mixture and uses advised against

Identified uses	Reagent for analysis

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation | 290 Concord Road, Billerica, MA 01821, United States of America | General Inquiries: +1-978-715-4321 | Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5)
Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 2, H225
Eye irritation, Category 2, H319
Specific target organ systemic toxicity - single exposure, Category 3, Central nervous system, H336
For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Hazard pictograms

Signal Word
Danger

Hazard Statements
H225 Highly flammable liquid and vapor.

H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary Statements
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P403 + P235 Store in a well-ventilated place. Keep cool.

OSHA Hazards
This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS and may deviate from the GHS information.

Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula	$CH_3CH(OH)CH_3$	C_3H_8O (Hill)
Synonyms	IPA, iPrOH	
Molar mass	60.1 g/mol	

Hazardous ingredients
Chemical Name (Concentration)
CAS-No.
2-Propanol (>= 90 % - <= 100 %)
67-63-0
Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures
Inhalation
After inhalation: fresh air. Consult doctor if feeling unwell.

Skin contact
After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact
After eye contact: rinse out with plenty of water. Call in ophthalmologist.

Ingestion
After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed
irritant effects, respiratory paralysis, Drowsiness, Dizziness, Unconsciousness, narcosis, inebriation, Headache, drowziness, Coma

Drying-out effect resulting in rough and chapped skin.

Indication of any immediate medical attention and special treatment needed

No information available.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at ambient temperatures.
Pay attention to flashback.
Development of hazardous combustion gases or vapors possible in the event of fire.

Advice for firefighters

Special protective equipment for fire-fighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.
Cool closed containers exposed to fire with water spray.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Keep away from heat and sources of ignition. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains. Risk of explosion.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Work under hood. Do not inhale substance/mixture. Avoid generation of vapors/aerosols.

Observe label precautions.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

Store below +30°C (+86°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Ingredients

Basis	Value	Threshold limits	Remarks
2-Propanol 67-63-0			
ACGIH	Time Weighted Average (TWA):	200 ppm	
	Short Term Exposure Limit (STEL):	400 ppm	
NIOSH/GUIDE	Recommended exposure limit (REL):	400 ppm 980 mg/m³	
	Short Term Exposure Limit (STEL):	500 ppm 1,225 mg/m³	
OSHA_TRANS	PEL:	400 ppm 980 mg/m³	
Z1A	Short Term Exposure Limit (STEL):	500 ppm 1,225 mg/m³	
	Time Weighted Average (TWA):	400 ppm 980 mg/m³	

Engineering measures
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures
Change contaminated clothing. Application of skin- protective barrier cream recommended.
Wash hands after working with substance.

Eye/face protection
Safety glasses

Hand protection
Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Other protective equipment:
Flame retardant antistatic protective clothing

Respiratory protection
required when vapors/aerosols are generated.
Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	alcohol-like
Odor Threshold	1.0 - 196.1 ppm
pH	at 68 °F (20 °C) neutral
Melting point	-89.5 °C
Boiling point/boiling range	180.3 °F (82.4 °C) at 1,013 hPa
Flash point	54 °F (12 °C) Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	2 %(V)
Upper explosion limit	13.4 %(V)
Vapor pressure	43 hPa at 68 °F (20 °C)
Relative vapor density	2.07
Density	0.786 g/cm³ at 68 °F (20 °C)
Relative density	No information available.
Water solubility	at 68 °F (20 °C) soluble

Partition coefficient: n-octanol/water	log Pow: 0.05 OECD Test Guideline 107 Bioaccumulation is not expected.
Autoignition temperature	No information available.
Decomposition temperature	Distillable in an undecomposed state at normal pressure.
Viscosity, dynamic	2.2 mPa.s at 68 °F (20 °C)
Explosive properties	Not classified as explosive.
Oxidizing properties	none
Ignition temperature	797 °F (425 °C) Method: DIN 51794
Minimum ignition energy	0.65 mJ
Conductivity	< 0.1 µS/cm

SECTION 10. Stability and reactivity

Reactivity
Vapors may form explosive mixture with air.

Chemical stability
The product is chemically stable under standard ambient conditions (room temperature) .

Possibility of hazardous reactions
Risk of ignition or formation of inflammable gases or vapors with:

Alkali metals, Alkaline earth metals, Aluminum

Exothermic reaction with:

Oxidizing agents, Nitric acid, Aldehydes, Amines, fuming sulfuric acid, Iron

Risk of explosion with:

chlorates, Phosgene, organic nitro compounds, hydrogen peroxide, nitrogen oxides

Conditions to avoid
Warming.

Incompatible materials
rubber, various plastics, oils

Hazardous decomposition products
no information available

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure
Inhalation, Eye contact, Skin contact

Target Organs
Eyes
Skin
Respiratory system

Acute oral toxicity
LDLO human: 3,570 mg/kg (RTECS)

LD50 rat: 5,045 mg/kg (RTECS)

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary edema and pneumonitis.

Acute inhalation toxicity
LC50 rat: 46.5 mg/l; 4 h (External MSDS)

Symptoms: Irritation symptoms in the respiratory tract.

Acute dermal toxicity
LD50 rabbit: 12,800 mg/kg
(RTECS)

Skin irritation
Drying-out effect resulting in rough and chapped skin.

Eye irritation
rabbit
Result: Eye irritation
(RTECS)

Causes serious eye irritation.

Sensitization
Sensitization test: guinea pig
Result: negative
(IUCLID)

Genotoxicity in vivo
Mutagenicity (mammal cell test): micronucleus.
Result: negative
(IUCLID)

Genotoxicity in vitro
Ames test
Result: negative
(IUCLID)

Carcinogenicity
Did not show carcinogenic effects in animal experiments. (IUCLID)

Reproductive toxicity
No impairment of reproductive performance in animal experiments. (IUCLID)

Teratogenicity
Did not show teratogenic effects in animal experiments. (IUCLID)

Specific target organ systemic toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ systemic toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information
Systemic effects:
After absorption:
Headache, Dizziness, inebriation, Unconsciousness, narcosis
After uptake of large quantities:
respiratory paralysis, Coma
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish
LC50 Lepomis macrochirus (Bluegill sunfish): 1,400 mg/l; 96 h (ECOTOX Database)

Toxicity to daphnia and other aquatic invertebrates
EC5 E.sulcatum: 4,930 mg/l; 72 h (maximum permissible toxic concentration) (Lit.)

EC50 Daphnia magna (Water flea): 13,299 mg/l; 48 h (IUCLID)

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): > 1,000 mg/l; 72 h (IUCLID)

Toxicity to bacteria
EC5 Pseudomonas putida: 1,050 mg/l; 16 h (Lit.)

Persistence and degradability

Biodegradability
95 %; 21 d
OECD Test Guideline 301E
Readily biodegradable.

Theoretical oxygen demand (ThOD)
2,400 mg/g
(Lit.)

Ratio BOD/ThBOD
BOD5 49 %
(IUCLID)

Ratio COD/ThBOD
96 %
(Lit.)

Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: 0.05
OECD Test Guideline 107
Bioaccumulation is not expected.

Mobility in soil

No information available.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

SECTION 14. Transport information

Land transport (DOT)

UN number	UN 1219
Proper shipping name	ISOPROPANOL
Class	3
Packing group	II
Environmentally hazardous	--

Air transport (IATA)

UN number	UN 1219
Proper shipping name	ISOPROPANOL
Class	3
Packing group	II
Environmentally hazardous	--

Special precautions for user	no

Sea transport (IMDG)

UN number	UN 1219
Proper shipping name	ISOPROPANOL
Class	3
Packing group	II
Environmentally hazardous	--
Special precautions for user	yes
EmS	F-E S-D

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Flammable Liquid
Eye irritant
Target organ effects

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

2-Propanol	67-63-0	*100 %*

SARA 302

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

DEA List I

Not listed

DEA List II

Not listed

US State Regulations

Massachusetts Right To Know

Ingredients
2-Propanol

Pennsylvania Right To Know
Ingredients
2-Propanol

New Jersey Right To Know
Ingredients
2-Propanol

California Prop 65 Components
This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA:	All components of the product are listed in the TSCA-inventory.
DSL:	All components of this product are on the Canadian DSL.

SECTION 16. Other information

Training advice
Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H225	Highly flammable liquid and vapor.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 04/28/2014

EC-Material Safety Data Sheet

1. Identification of the substance/preparation and of the company/undertaking

Commercial name:
Lotus Fluid Lösung

Supplier:
Advanced Materials Science rano GmbH
Gerhardstr. 11
D-66126 Saarbrücken
Phone +49 681 6857364
Fax: +49 681 6857795

Emergency phone No.: +49 6841 19240 (Poison information centre of the University Clinic Homburg/Saar)

2. Composition/Information on ingredients

Chemical characterization (preparation)

organical functionable Polysilane system

3. Hazards identification

Classification
This preparation is not classified as dangerous according to Directive 1999/45/EC.
No risks worthy of mention. Please observe the information on the safety data sheet at all times.

4. First aid measures

After inhalation
In case of formation of aerosols or mist: Provide fresh air.
After contact with skin
After contact with skin, wash immediately with plenty of Water and soap.
After contact with eyes
If product gets into the eye, keep e4yelid open and rinse immediately with large quantities of water, for at least 5 minutes. Subsequently consult an opthalmologist.
After ingestion
Rinse mouth thoroughly with water. After ingestion of absorption substances: Consult physician.
Advice to doctor
After ingestion of absorption substances:
Give activated carbon, in order to reduce the resorption in the gastro-enteric tract.

5. Fire-fighting measures

Suitable extinguishing media
Water fog. Foam. Carbon dioxide (CO2). Extinguishing powder.

6. Accidental release measures

Personal precautions
Wear personal protection equipment.
Environmental precautions
Do not empty into drains or the aquatic environment.
Methods for cleaning up/taking up
Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).
Collect in closed containers for disposal.

7. Handling and storage

Handling
Advice on safe handling
Do not breathe gas/fumes/vapour/spray.
Avoid contact with skin and eyes.
Advice on protection against fire and explosion
Take precautionary measures against static discharges.
Keep away from sources of ignition. No smoking.
Storage
Requirements for storage rooms and vessels
Keep container tightly closed in a cool, well-ventilated place.
Storageclass (VCI) : 12

8. Exposure controls/personal protection

Exposure limit values

Exposure controls

Protective and hygiene measures
Provide for good ventilation, when develop aerosols/mist.
Avoid contact with skin and eyes.
Take off immediately all contaminated clothing
When using do not eat, drink or smoke.
Respiratory protection
Respiratory protection required in case of: Exceeding critical value aerosol or mist generation.
Wear suitable breathing apparatus (filter typ ABEK).
Hand protection
Suitable material: Butyl rubber. FKM (Fluoroelastomer (Viton)).
Material thickness: 0.4 – 0.5 mm
penetration time >= 480 min
In the cases of special applications, it is recommended to check the chemical resistance with the manufacturer of the gloves.
Eye protection
Tightly sealed safety glasses.

9. Physical and chemical properties

General information
Physical state : liquid
Colour : light yellow
Odour : odourless

Important health, safety and environmental information

	Test method
pH-Value (at 20 °C) : ca. 4 (1000 g/l)	

Changes in the physical state

Melting point : - 1° C	
Boiling point : 97 - 100 °C	ASTM D 1120
Flash point : > 61 °C	DIN BS EN 22719
Density (at 20 °C) : 1,00 g/cm³	DIN 51757
Water solubility : miscible.	
Viscosity / dynamic : 1,6 mPa·s (at 20 °C)	

Other information
Formation of potentially explosive mixtures with: Air.

10. Stability and reactivity

Additional information
No dangerous reactions are known.

11. Toxicological information

Acute toxicity
oral LD50 > 2000 mg/Kg(rat)
inhalant LC50 > 5,5 mg/l / 4h (rat)

Corrosive and irritant effects
Dermal irritation: Not an irritant.
Irritation of eyes: Irritant effect possible.
Sensitization no danger of sensitization.

12. Ecological information

Ecotoxicity
fish toxicity:
LC50: brachydanio rerio: > 1000 mg/l /96h
LC 0: brachydanio rerio: 1000 mg/l /96h
Persistence and degradability
Biological degradation: 62 % Easily biodegradable (concerning to the criteria of the OECD)

13. Disposal considerations

Advice on disposal
Carry out a burning of harzardous waste according to official regulations.
For this product, the waste identity number according to the European waste catalogue can not be defined because the designated use by the consumer allows the classification first.
Arrange about the exact waste code with the local waste disposal expert.

14. Transport information

Land transport (ADR/RID)
Remarks (land transport)
Not a hazardous material with respect to these transportation regulations.

Inland waterways transport
Remarks (inland waterways transport)
Not a hazardous material with respect to these transportation regulations.

Marine transport
Remarks (marine transport)
Not a hazardous material with respect to these transportation regulations.

Air transport
Remarks (air transport)
Not a hazardous material with respect to these transportation regulations.

15. Regulatory information

Labelling
S phrases
02 Keep out of the reach of children

Additional information on EC regulations
There is no requirement for the product to be specially labelled according to EC directives or thecorresponding national laws.

National regulations

Water contaminating class : 1 - slightly water contaminating

16. Other information

Other data

The information is based on present level of our knowledge. It does not, however, give assurances of product properties and establishes no contract legal rights.
The receiver of our product is singulary responsible for adhering to existing laws and regulations.

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 21.11.2011 Version number 1 Revision: 21.11.2011

1 Identification of the substance/mixture and of the company/undertaking

· **Product identifier**

· **Trade name: Lycopodium extra pure**

· **Article number:** 8253
· **CAS Number:**
84082-56-4
· **EC number:**
282-002-3
· **Relevant identified uses of the substance or mixture and uses advised against**
· **Application of the substance / the preparation** Laboratory chemical

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Carl Roth GmbH + Co. KG
Schoemperlenstraße 3-5
76185 Karlsruhe
Telefon: +49/(0)721 5606-0 Telefax: +49/(0)721 5606-149 E-Mail: info@carlroth.de

· **Further information obtainable from:** Department Health, Safety and Environment
· **Emergency telephone number:** Poison Centre Munich Telefon +49/(0)89 19240

2 Hazards identification

· **Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008** Void

· **Classification according to Directive 67/548/EEC or Directive 1999/45/EC** Void

· **Label elements**
· **Labelling according to Regulation (EC) No 1272/2008** Void
· **Hazard pictograms** Void
· **Signal word** Void
· **Hazard statements** Void
· **Other hazards** All chemicals are potentially dangerous. They should only be handled by specially trained personnel.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

3 Composition/information on ingredients

· **Chemical characterization: Substances**
· **CAS No. Description**
84082-56-4 Lycopodium
· **Identification number(s)**
· **EC number:** 282-002-3

*
4 First aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air and to be sure call for a doctor.
· **After skin contact:**
Immediately rinse with water.
If there is any trouble seek medical help.
· **After eye contact:** To b e sure rinse opened eye under running water. If there is any trouble seek medical help.
· **After swallowing:**
Rinse out mouth and drink a glass of water. Do not induce vomiting.
If there is any trouble seek medical help.

(Contd. on page 2)

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 21.11.2011 Version number 1 Revision: 21.11.2011

Trade name: Lycopodium extra pure

(Contd. of page 1)

· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Firefighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
Use fire extinguishing methods suitable to surrounding conditions.
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** Danger of dust explosion.
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures** Avoid formation of dust.
· **Environmental precautions:** No special measures required.
· **Methods and material for containment and cleaning up:**
Pick up mechanically.
Dispose of the material collected according to regulations.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Handling:**
· **Precautions for safe handling** Handling corresponding to laboratory safety guidelines.
· **Information about fire - and explosion protection:** Keep ignition sources away - Do not smoke.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** No special requirements.
· **Information about storage in one common storage facility:**
Store away from foodstuffs.
Store away from oxidizing agents.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in dry conditions.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical facilities:** No further data; see item 7.

· **Control parameters**
· **Ingredients with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists valid during the making were used as basis.

(Contd. on page 3)

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 21.11.2011 Version number 1 Revision: 21.11.2011

Trade name: Lycopodium extra pure

(Contd. of page 2)

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.
· **Respiratory protection:** Required when dusts are generated.
· **Protection of hands:**
Not required.


Protective gloves

· **Material of gloves**
Nitrile, thickness: >0.1 mm
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
Value for the permeation: Level ≥ 6
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Safety glasses
· **Body protection:** Protective work clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**
Form: Solid
Colour: Light yellow
· **Odour:** Odourless

· **Change in condition**
Melting point/Melting range: Undetermined.
Boiling point/Boiling range: Undetermined.

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Product is not flammable.

· **Danger of explosion:** Danger of dust explosion.

· **Density:** Not determined.

· **Solubility in / Miscibility with water:** Insoluble.
· **Other information** No further relevant information available.

10 Stability and reactivity

· **Reactivity**
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** Heating
· **Possibility of hazardous reactions** Risk of dust explosion.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** Strong oxidizing agents.

(Contd. on page 4)

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 21.11.2011 Version number 1 Revision: 21.11.2011

Trade name: Lycopodium extra pure

(Contd. of page 3)

· **Hazardous decomposition products:** No information available.

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **LD/LC50 values relevant for classification:** Quantitative data on the toxicity of this product are not available.
· **Primary irritant effect:**
· **on the skin:** No information available.
· **on the eye:** No information available.
· **after inhalation:** No information available.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
When used and handled according to specifications, the product does not have any harmful effects to our experience and the information provided to us.
· **Further information:** The product should be handled with the care usual when dealing with chemicals.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** Quantitative data on the ecological effect of this product are not available.
· **Persistence and degradability** No further relevant information available.
· **Behaviour in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation**
The disposal is regionally differently regulated, therefore the kind of disposal is to be inquired at the responsible authorities.

· **Uncleaned packaging:**
· **Recommendation:** Disposal according to official regulations.

*
14 Transport information

· **UN-Number**
· **ADR, ADN, IMDG, IATA** Void
· **UN proper shipping name**
· **ADR, ADN, IMDG, IATA** Void
· **Transport hazard class(es)**

· **ADR, ADN, IMDG, IATA**
· **Class** Void
· **Packing group**
· **ADR, IMDG, IATA** Void
· **Environmental hazards:**
· **Special precautions for user** Not applicable.
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

(Contd. on page 5)

Safety data sheet
according to Regulation (EC) No. 1907/2006

Printing date 21.11.2011 Version number 1 Revision: 21.11.2011

Trade name: Lycopodium extra pure

(Contd. of page 4)

· **Transport/Additional information:**

· **ADR**
· **Remarks:** Not subject to transport regulations.
· **UN "Model Regulation":** -

*
15 Regulatory information

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

· **National regulations:**

· **Waterhazard class:** Generally not hazardous for water (German regulation).
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing MSDS:** Department: Health, Safety and Environment
· **Contact:** Herr Heine
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
ICAO: International Civil Aviation Organization
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
· *** Data compared to the previous version altered.**

SCHLINGMEIER QUARZSAND

Schlingmeier Quarzsand
GmbH & Co. KG
Ackerstraße 8
38179 Schwülper
Telefon +49 (0) 53 03 - 95 01 - 0
Telefax +49 (0) 53 03 - 95 01 - 95

DATASHEET

Quartz sand: G20EA, G20TEA
- damp or fire-dried -

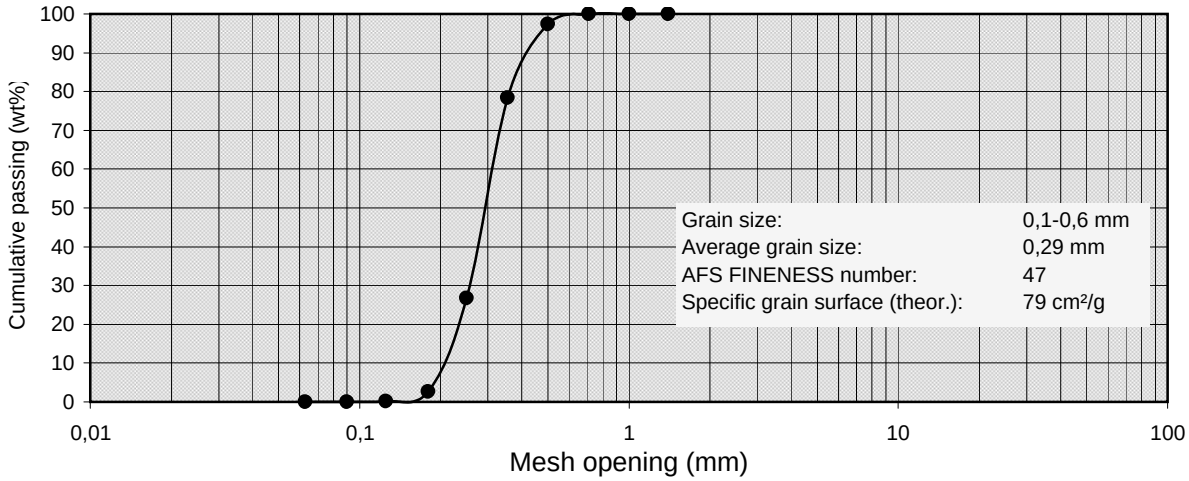
1. General characteristics

Crystal quartz sand from SCHLINGMEIER is multiple washed and hydroclassified. The sand is characterized by its extremely high chemical and mineralogical purity. After processing the sand is neutral in pH, free of organic contaminations, soluble salts and soilings. One of the most conspicuous characteristics is its high whiteness and brightness. Delivery is made in bulk, paper or PE-bags or big bags.

2. Grain size distribution

Sieve mesh opening (mm) - Retainings (wt.%)

1	0,71	0,5	0,355	0,25	0,18	0,125	0,09	0,063	<0,063	mm
0	*traces*	*2,6*	*19,0*	*51,7*	*24,0*	*2,5*	*0,2*	*traces*	*0*	*wt.%*



3. Chemical analysis according to DIN 51001 with RFA

SiO_2	Al_2O_3	K_2O	Na_2O	CaO	MgO	Fe_2O_3	TiO_2	LOI	DIN 51001 (RFA)
>99,6	*0,1*	*<0,02*	*<0,01*	*<0,01*	*<0,01*	*0,014*	*0,014*	*<0,1*	*wt.%*

LOI = Loss on ignition

4. Physical and physical-chemical characteristics

Density:	*2,65 g/cm³*	Pyrometric cone equivalent (Seger):	*SK 34 (>1755 °C)*
Bulk density:	*1,4 - 1,5 t/m³ (dry)*	Sinter beginning:	*>1600 °C*
Grain shape:	rounded-off	pH-value of eluate (DIN 53 200):	*7,0 ± 0,5*
Hardness:	*7 (Mohs)*	Conductivity (20 g, 100 ml, 1 h):	*10 ± 5 µS/cm*

01.02.2010