

Safety Data Sheet

according to Regulations 1907/2006/EC (REACH) and 2015/830/EU

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

1.1 Product identifier

REF 91848
 Product name NANOCOLOR Silica

REACH Registration number(s): see SECTION 3.1/3.2 or
 A registration number for the substance(s) does not exist because the annual tonnage does not require registration or the substance or its use is excluded from registration.

1 x 100 mL Silica R1
 1 x 100 mL Silica R2
 1 x 100 mL Silica R3

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

Relevant identified uses
 Product for analytical use.
 Exposure Scenario Classification according REACH, RIP 3.2 Codes: SU 0-2, PC 21, PROC 15, AC 0
 The exposure scenario is integrated into sections 1-16.

Uses advised against
 not described

1.3 Details of the supplier of the safety data sheet

Manufactured by:
 MACHEREY-NAGEL GmbH & Co. KG
 Neumann-Neander-Str. 6-8, 52355 Dueren, GERMANY
 Tel.: +49 2421 969 0 E-mail: sds@mn-net.com (msds@mn-net.com)

1.4 Emergency telephone number

Outside Germany (DE): Call your regional Poisons Information Service or call local Life Saving Service.
 DE: Gemeinsames Giftinformationszentrum (GGIZ) 99089 Erfurt tel. +49 361 730 730

You find our current versions of SDS (22 languages) in Internet: <http://www.mn-net.com/SDS>

SECTION 2: Hazard identification

2.0 Classification of the complete product



GHS05 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H315	Skin Irrit. 2
H318	Eye Dam. 1
H319	Eye Irrit. 2

2.1 Classification of the substance or mixture

100 mL Silica R1



GHS07

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Signal word	WARNING
Hazard identification	Hazard classes/categories
H315	Skin Irrit. 2
H319	Eye Irrit. 2
100 mL Silica R2	
Signal word	Do not need labelling as hazardous
No hazard class	-

100 mL Silica R3



Signal word	GHS05
Signal word	DANGER
Hazard identification	Hazard classes/categories
EUH031	031 not defined
H318	Eye Dam. 1

2.2 Label elements

According **CLP directive** inner packages must be only labelled with GHS symbol(s) and product identifier(s) (EU 1272/2008 Annex I - 1.5.1.2).

Harmful chemicals/mixtures with signal word: **WARNING** must not be labelled with H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2).

100 mL Silica R1



GHS07
Signal word: WARNING

100 mL Silica R2

Do not need labelling as hazardous
Signal word: -

100 mL Silica R3



GHS05
Signal word: DANGER

H318
Causes serious eye damage.

P280sh, P305+351+338, P310
Wear protective gloves/eye protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

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2.3 Other hazards

Possible hazards from physicochemical properties

Generally in the case of pH values are less than 2 or higher than 11.5 then it is corrosive. In the case of pH values are less than 5 or higher than 9 then it is irritant. ---

Information pertaining to particular risks to human and possible symptoms

Causes varying degrees of acid burns on the skin, to the eyes and to the mucous membranes and wounds which do not heal quickly depending on the concentration, temperature and the exposure time. Vapours especially which steam from hot liquids and mist can have a severe irritant effect upon the eyes and the respiratory organs.

-

Information pertaining to particular risks to the environment

PBT: not applicable

vPvB: not applicable

Other hazards

Contains an odor intensive reagent. ---

SECTION 3: Composition/information on ingredients

3.1 Substances or 3.2 Mixtures

100 mL Silica R1

Chemical:	<i>ammonium heptamolybdate</i>	CAS No.:	12054-85-2
Classification:	No criteria for classification or naming of chemical not required.		
Formula:	H ₂₄ Mo ₇ N ₆ O ₂₄		
Pseudonym:	hexaammonium heptamolybdate		
TSCA Inventory:	listed (CAS 11098-84-3)		
REACH Reg. No.:	01-2119498057-28-xxxx		
EC No.:	234-722-4		
RTECS:	QA5076000 / QA4900000	MFCD:	00167059
KE No.:	not listed		
Concentration:	2 - <5 %	Correlation factor:	x 0.58 (= %Mo)
The classification refers to weight percent of the metal (according to CLP Regulation 2008/1272/EC Annex VI, 1.1.3.2 Note 1)			
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

Chemical:	<i>sulfuric acid</i>	CAS No.:	7664-93-9
Classification:	H314, Skin Corr. 1B		
Formula:	H ₂ SO ₄ (•H ₂ O)		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119458838-20-xxxx		
EC No.:	231-639-5	Indice No.:	016-020-00-8
RTECS:	WS5600000		
KE No.:	KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
Concentration:	5 - <15 %		
acc. CLP (GHS):	H315, Skin Irrit. 2, H319, Eye Irrit. 2		

100 mL Silica R2

Chemical:	<i>oxalic acid</i>	CAS No.:	144-62-7
Classification:	H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H318, Eye Dam. 1		
Formula:	C ₂ H ₂ O ₄ ; HOOC-COOH		
Pseudonym:	ethanedioic acid		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119534576-33-xxxx		
EC No.:	205-634-3	Indice No.:	607-006-00-8
RTECS:	RO2450000		
KE No.:	KE-13152		
Concentration:	1 - <5 %		
acc. CLP (GHS):	The criteria for classification are not fulfilled.		

100 mL Silica R3

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Chemical:	<i>sodium disulfite</i>	CAS No.:	7681-57-4
Classification:	H302, Acute Tox. 4 oral, H318, Eye Dam. 1, EUH031, 031 not defined		
Formula:	Na ₂ O ₅ S ₂		
Pseudonym:	sodium metabisulphite, sodium pyrosulfite		
TSCA Inventory:	listed		
REACH Reg. No.:	01-2119531326-45-xxxx	Indice No.:	016-063-00-2
EC No.:	231-673-0		
RTECS:	UX8225000		
KE No.:	KE-12701		
Concentration:	10 - <25 %		
acc. CLP (GHS):	H318, Eye Dam. 1, EUH031, 031 not defined		

3.3 Remarks

When not listed, mixtures are added with water [CAS No. 7732-18-5] to 100%.

List of H and P phrases: see section 16.1

SECTION 4: First aid measures

4.1 Description of first aid measures

Place insured person out of danger zone to fresh air immediately. Ensure quiet, warmth, and provide resuscitation if necessary. If necessary contact medical advice. Remove contaminated clothing. Show product package, packing insert and this material safety data sheet to the doctor.

4.1.1 After SKIN Contact

Remove contaminated clothing. Rinse the affected skin or mucous membrane thoroughly under running water. (If possible) use soap.

4.1.2 After EYE Contact

After contact with the eyes rinse thoroughly under running water with the eyelid wide open for min. 10 minutes with eye washing bottle, eye douche or running water (protect intact eye). Before (if possible) apply eye drops Proxymetacaine 0.5%, if the opening the eyelid convulsion is painful. Further treatment to be carried out by an eye specialist.

4.1.3 After INHALATION of vapours

After inhalation of foam or vapour fresh air should be inhaled. Keep airways free. ---

4.1.4 After ORAL Intake

After oral intake lots of water should be drunk after it has been ingested. ---

4.2 Most important symptoms and effects, both acute and delayed

4.3 Indication of any immediate medical attention and special treatment needed

After EYE CONTACT rinse immediately with plenty of water for a long time. Eyelid convulsion measures. Name the corrosive chemical. Further treatment must to be carried out by an eye specialist. ---

SECTION 5: Firefighting measures

5.1 Extinguishing media

Fire extinguishers appropriate to the fire classification, and, if applicable, a fire blanket must be available in a prominent location in the work area. All extinguishers like FOAM, WATER SPRAY, DRY POWDER, CARBON DIOXIDE can be used.

5.2 Special hazards arising from the substance or mixture

Formation of hazardous and caustic vapour-air mixtures possible. ---

5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic.

5.4 Additional information

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear eye protection, respectively face protection. Regular staff training is necessary, indicating hazards and precautions on the basis of operating instructions. Restrictions on activity must be observed.

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6.2 Environmental precautions

not necessary

6.3 Methods and material for containment and cleaning up

Bind any escaping liquid with inert absorbent. And dispose in accordance to local regulations for the disposal of hazardous chemicals.
Clean any contaminated equipment and floors with plenty of water.
Collect small amounts of leaked liquid and flush with water into drains.

6.4 Reference to other sections

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product.

7.2 Conditions for safe storage, including any incompatibilities

The original product package of MACHEREY-NAGEL allows a safe storage.

Storage class (VCI): 8B
Water hazard class (DE): 1

7.2.1 Requirements for stock rooms and containers

Keep original product packages tightly closed during handling and storage. Use inbreakable container for transport of glass bottles.

7.3 Specific end use(s)

Product for analytical use.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

100 mL Silica R1

Chemical: ammonium heptamolybdate
TRGS 900 (DE): [Mo] 5 E mg/m³
E/e respirable
SUVA(CH) MAK value: [Mo] 5 e mg/m³

CAS No.: 12054-85-2

Chemical: sulfuric acid

DNEL: [inh] 50 µg/m³
DNEL = Derived No-Effect Level (for workers)
PNEC_(fresh water): 2.5 µg/L
PNEC = Predicted No Effect Concentration

CAS No.: 7664-93-9

EU value: 0.1 e mg/m³
TRGS 900 (DE): 0.1 E mg/m³
E/e respirable

Short-term exposure factor: 1 (I), Y
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 0,1 e mg/m³

NIOSH: NTP Report on Carcinogens (RoC) List Yes (Known to be a human carcinogen); [TWA] 1 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: [TWA] 1 mg/m³

100 mL Silica R2

Chemical: oxalic acid
DNEL: 4.03_{inh} mg/kg
DNEL = Derived No-Effect Level (for workers)
PNEC_(fresh water): 0,1622 mg/L
PNEC = Predicted No Effect Concentration

CAS No.: 144-62-7

EU value: 1 e mg/m³
TRGS 900 (DE): 1 E mg/m³
E/e respirable

Short-term exposure factor: 1 (I), H
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 1 e mg/m³

NIOSH: TWA 1 / ST 2 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: TWA 1 mg/m³

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100 mL Silica R3

Chemical: *sodium disulfite*

CAS No.: 7681-57-4

DNEL: [inh] 225 mg/m³

DNEL = Derived No-Effect Level (for workers)

TRGS 900 (DE):

-

E/e respirable

SUVA(CH) MAK value: 5 e mg/m³NIOSH: [TWA] 5 mg/m³

[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

OSHA: none

8.2 Exposure controls

Good ventilation and extraction system in the room, floor resistant to chemicals with floor drainage and washing facilities. The highest level of cleanliness must be maintained at the workplace.

8.2.1 Respiratory protection

No additional recommendations.

8.2.2 Hand protection

Yes, gloves according EN 374 (permeation time >30 min - level 2), consist of PVC, natural latex, Neopren, or Nitril (f.ex. from Ansell or KCL). Use for short times chemical resistant latex gloves with code EN 374-3 level 1.

8.2.3 Eye protection

Yes, safety glasses according EN 166 with integrated side shields or wrap-around protection or face protection.

8.2.4 Skin protection

Recommended to avoid contamination with these hazards.

8.2.5 Personal hygiene

Eating, drinking, smoking, taking snuff and storage of food in work areas and at outdoor workplaces is prohibited. Avoid contact with the skin, eyes and clothing. Rinse any clothing on which the substance has been spilled, and soak it in water. Wash hands thoroughly with soap and water when stopping work and before eating, and then apply protective skin cream.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

100 mL Silica R1

Appearance: liquid

Colour: colourless

Odor: odorless

pH: 0-1

Specific gravity: 1,05 g/cm³

Solubility in water: 0-50 %

100 mL Silica R2

Appearance: liquid

Colour: colourless

Odor: odorless

pH: 3-5

Specific gravity: 1,02 g/cm³

100 mL Silica R3

Appearance: liquid

Colour: colourless

Odor: penetrative

pH: 5-7

Solubility in water: 0-30 %

9.2 Other information

Data for the other parameters of the mixtures are not available, because no registration and no chemical safety report is required.

Relevant Properties of Substance Group

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

No known instability.

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10.3 Possibility of hazardous reactions

No further data available.

10.4 Conditions to avoid

Not necessary. Observe labeled storage temperature. ---

10.5 Incompatible materials

Avoid contact with strong acids or alkalines.

10.6 Hazardous decomposition products

In the original package all parts/all reagents are safety and separated stored. Decompositions are not observed during the expiration period under recommended conditions.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Following information is valid for pure substances. Quantitative data on the toxicity of this product are not available.

100 mL Silica R1

Chemical:	<i>ammonium heptamolybdate</i>	CAS No.:	12054-85-2
TSCA Inventory:	listed (CAS 11098-84-3)		
Japan ISHL:	listed $\geq 1,0\%/\geq 0,1\%$,		
Korea Exist.Chem.Inventory:	not listed		

Chemical:	<i>sulfuric acid</i>	CAS No.:	7664-93-9
TSCA Inventory:	listed	California Proposition 65 List:	not listed
ACGIH:	1 ppm		
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system, teeth		
Symptoms:	irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis;		
dental erosion; eye, skin burns; dermatitis			
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	not listed, Japan PDSCL: Deleterious Substance		
Japan ISHL:	listed $\geq 1,0\%/\geq 1,0\%$, Article 57-2 (SDS required)		
South Korea TCCA:	Accident Precaution Chemical Yes		
Korea Exist.Chem.Inventory:	KE-32570, >10% Toxic 97-1-405, Acc. Precaution Chem.		
LD50 _{orl rat} :	2140 mg/kg		
LC50 _{ihl rat} :	[8h] 600/ [4h] 850 mg/m ³		
TRGS 905 (DE):	Kat 4		

100 mL Silica R2

Chemical:	<i>oxalic acid</i>	CAS No.:	144-62-7
TSCA Inventory:	listed	California Proposition 65 List:	not listed
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system, kidneys		
Symptoms:	irritation eyes, skin, mucous membrane; eye burns; localized pain, cyanosis; shock, collapse,		
convulsions; kidney damage			
Australia NICNAS:	listed >1,0%/>1,0%,	Canada CEPA 1999:	DSL Yes
Japan CSCL/PRTR:	not listed, Japan PDSCL: Deleterious Substance		
Japan ISHL:	listed $\geq 1,0\%/\geq 0,1\%$, Article 57-2 (SDS required)		
South Korea TCCA:	not listed		
Korea Exist.Chem.Inventory:	KE-13152		
LD50 _{orl rat} :	7.5 g/kg		
LD50 _{drm rbt} :	20 g/kg		

100 mL Silica R3

Chemical:	<i>sodium disulfite</i>	CAS No.:	7681-57-4
TSCA Inventory:	listed	California Proposition 65 List:	not listed
Exposure Routes:	inhalation, ingestion, skin and/or eye contact		
Target Organs:	Eyes, skin, respiratory system		
Symptoms:	irritation eyes, skin, mucous membrane		
Australia NICNAS:	not listed	Canada CEPA 1999:	DSL yes
Japan CSCL/PRTR:	not listed, Japan PDSCL: not listed		
Japan ISHL:	listed $\geq 1,0\%/\geq 1,0\%$, Article 57-2 (SDS required)		

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South Korea TCCA: not listed
 Korea Exist.Chem.Inventory: KE-12701
 LD50_{orl rat}: 1540 mg/kg
 LD50_{drm rat}: 2000 mg/kg

SECTION 12: Ecological information

12.1 Toxicity

Following information is valid for pure substances.

100 mL Silica R1

Chemical: *ammonium heptamolybdate*
 Water hazard class (DE): 1 WGK No.: 0637
 Storage class (VCI): 12-13

CAS No.: 12054-85-2

Chemical: *sulfuric acid*
 PNEC_(fresh water): 2.5 µg/L
 PNEC = Predicted No Effect Concentration
 LC50_{fish/96h}: [NOEC, 65d] 25 µg/L
 EC50_{daphnia/48h}: 100 mg/L
 EC10_{pseudomonas putita/16h}: [72h] 100 mg/L
 Water hazard class (DE): 1 WGK No.: 0182
 Storage class (VCI): 8 B

CAS No.: 7664-93-9

100 mL Silica R2

Chemical: *oxalic acid*
 PNEC_(fresh water): 0,1622 mg/L
 PNEC = Predicted No Effect Concentration
 LC50_{leuciscus idus/96h}: 160 mg/L
 EC50_{daphnia/48h}: 61_{24h} / 162.2 mg/L
 EC10_{pseudomonas putita/16h}: 1550_{16d} mg/L
 Water hazard class (DE): 1 WGK No.: 0166
 Dispersion coefficient_(octanol-water): -1.7
 Storage class (VCI): 12

CAS No.: 144-62-7

100 mL Silica R3

Chemical: *sodium disulfite*
 LC50_{fish/96h}: 150-220 mg/L
 EC50_{daphnia/48h}: 89 mg/L
 IC50_{scenedesmus quadricauda/72h}: 48 mg/L
 Water hazard class (DE): 1 WGK No.: 1169
 Storage class (VCI): 8 B

CAS No.: 7681-57-4

12.2 Persistence and degradability

not necessary

12.3 Bioaccumulative potential

not necessary

12.4 Mobility in soil

not necessary

12.5 Results of PBT and vPvB assessment

no data available

12.6 Other adverse effects

no additional data available

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SECTION 13: Disposal considerations

Please observe local regulations for collection and disposal of hazardous waste and contact waste disposal company, where you will obtain information on laboratory waste disposal (waste code number 16 05 06).

13.1 Waste treatment methods

Normally it is possible to empty small amounts (diluted!) into drains. Empty containers of corrosive reagents prior to disposal, rinse with water.

SECTION 14: Transport information

14.1. UN number: 3316 **14.2. UN proper shipping name:** Chemical Kit
14.3. Class: 9 **14.4. Packing group:** II
Road transport
 Classification code: M11 Tunnel restriction code: E
 Limited Quantity: acc. ADR 3.3.1/251: see LQ in Alternative declaration for transportation
Air transport
 PAX: 960 max. weight PAX: 10 KG
 CAO: 960 max. weight CAO: 10 KG
Maritime transport
 EmS: F-A, S-P Storage category: A

Or use **Alternative declaration for transportation:**

14.1 UN number: 3264
14.2 UN proper shipping name: Corrosive liquid, acidic, inorganic, n.o.s. (sulfuric acid, sodium disulfite solution)
14.3 Class: 8 **14.4 Packing group:** II
Road transport
 Classification code: C1
 Limited Quantity: 1 L Tunnel restriction code: E
 Excepted Quantity: E 2
Air transport
 PAX: 851 max. weight PAX: 1 L
 CAO: 855 max. weight CAO: 30 L
Maritime transport
 EmS: F-A, S-B Storage category: B

14.5 Environmental hazards

none, contains only small quantities of hazardous substances

14.6 Special precautions for user

not necessary

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

not applicable

SECTION 15: Regulatory information

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

German act governing protection from hazardous substances (Chemicals Act / Chemikaliengesetz- ChemG), revised on August 2013
 German order governing protection from hazardous substances (Ordinance on Hazardous Substances / Gefahrstoffverordnung - GefStoffV), revised on November 2010, according to Directive 98/24/EC
 TRGS 200, German engineering rules governing the classification and labelling of hazardous substances, preparations and products, updated October 2011
 MN Leaflet/User manual, also see www.mn-net.com
 Look for your country-specific regulations.

15.2 Chemical safety assessment

not necessary for these small amounts ---

SECTION 16: Other information

16.1 List of H and P phrases

16.1.1 List of relevant H phrases

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- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- EUH031 Contact with acids liberates toxic gas.

16.1.2 List of relevant P phrases

- P260D Do not breathe vapours.
- P280sh Wear protective gloves/eye protection.
- P305+351+338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P310 Immediately call a POISON CENTER/doctor.

16.2 Training advice

Multiple safety training of staffs about danger and protection by using hazards in working area. Additionally training and introduction of staffs for using these products.

16.3 Recommended restriction on use

Only for professional user.
 Look about employee restrictions for young people (f. ex. 94/33/EC or DE § 22 JArbSchG)!
 Look about employee restrictions for pregnant women and nursing women (f.ex. 92/85/EEC or for DE §§ 11-13 MuSchG 2017)!
 An individual package of this product or test kit has a moderate hazardous potential.

16.4 Further information

MACHEREY-NAGEL GmbH & Co. KG provides the information contained herein in good faith being up-to-date of own realizations at revision time. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgement in determining its appropriateness for a particular purpose.
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16.5 Sources of key data

- Regulation 453/2010/EU REACH - REQUIREMENTS FOR THE COMPILATION OF SAFETY DATA SHEETS
- Regulation 487/2013/EU, 4th adaptation of CLP regulation to technical and scientific progress
- Regulation 669/2018/EU, 4th adaptation of CLP regulation to technical and scientific progress
- TRGS 900, German engineering rules governing limits in air at work, updated 03/2018
- SUVA .CH, Limits in air at work 2009, revised on 01.2009
- KÜHN, BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

Reason for Revision: 2016-03 Adaptation of regulation 1221/2015/EU

