

Safety Data Sheet

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

NANOCOLOR Cyanide Page: 1/10 Printing date: 01.10.2019 Date of issue: 02.01.2019

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

1.1 **Product identifier**

REF 91830

Product name NANOCOLOR Cyanide

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 7 g Cyanide R1 1 x 12 g Cyanide R2 2 x 100 mL Cyanide 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









GHS02

GHS05

GHS07

GHS08

DANGER Signal word

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H314	Skin Corr. 1B
H332	Acute Tox. 4 inh.
H334	Resp. Sens. 1

2.1 Classification of the substance or mixture

7 g Cyanide R1

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Signal word **DANGER**

Hazard identification	Hazard classes/categories
EUH031	031 not defined
H302	Acute Tox. 4 oral
H314	Skin Corr. 1B
H334	Resp. Sens. 1

12 g Cyanide R2

Do not need labelling as hazardous

Signal word

No hazard class

100 mL Cyanide R3





DANGER Signal word

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H302	Acute Tox. 4 oral
H312	Acute Tox. 4 derm.
H332	Acute Tox. 4 inh.

2.2 Label elements

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

Harmful chemicals/mixtures with signal word: WARNING and highly flammable chemicals/mixtures must not be labelled with H and P phrases until 125 mL (EU 1272/2008 Annex I - 1.5.2). This labelling exemption is NOT valid for sensibilizing substances.

7 g Cyanide R1







GHS05

GHS07

GHS08

Signal word: DANGER

H314, H334

Causes severe skin burns and eye damage. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

P260sh, P280sh, P303+361+353, P305+351+338, P310

Do not breathe dust/vapours. Wear protective gloves/eye protection. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. 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.

12 g Cyanide R2

Do not need labelling as hazardous

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Signal word: -

100 mL Cyanide R3





Signal word: DANGER

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. Flammable properties. ---

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.

Cause after oral intake, inhalation of vapours/dust, impairments of health when ingested in small quantities. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Information pertaining to particular risks to the environment

Avoid contact of substance/mixture to 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

7 g Cyanide R1

Chemical: CAS No.: 127-65-1

Classification: H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H334, Resp. Sens. 1, EUH031, 031 not defined

Formula: C₇ H₇ CINNaO₂ S

tosylchloramide sodium, Benzenesulfonamide, N-chloro-4-methyl-benzenesulfonamide, sodium salt Pseudonym: listed

TSCA Inventory: 616-010-00-9 EC No.: 204-854-7 Indice No.: RTECS: XT5616800 MFCD: 00000522

KE No .: 2000-3-1539 Concentration: 45 - <60 %

H302, Acute Tox. 4 oral, H314, Skin Corr. 1B, H334, Resp. Sens. 1, EUH031, 031 not defined acc. CLP (GHS):

Chemical: phosphates (buffer salts) CAS No .: -

Classification: No criteria for classification or naming of chemical not required.

 $K/Na_{1-3}\,H_{2-0}\,PO_4$ Formula: TSCA Inventory all listed

KE No.: listed Concentration: 50 - < 75 %

acc. CLP (GHS): The criteria for classification are not fulfilled

12 g Cyanide R2

Pseudonym:

Chemical: barbituric acid CAS No.: 67-52-7

2,4,6-trihydroxypyrimidine, 1H-pyrazole, 3,5-dimethyl-

Classification: No criteria for classification or naming of chemical not required. Formula: C₄ H₄ N₂ O₃

TSCA Inventory: listed

REACH Reg. No.: as intermediate EC No.: 200-658-0

RTECS: CP800000 MFCD: 00006666

97-3-1 KF No . Concentration: 80 - <100 %

acc. CLP (GHS): The criteria for classification are not fulfilled

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100 mL Cyanide R3

Chemical: pyridine CAS No.: 110-86-1

Classification: H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh.

Formula: C₅ H₅ N

Pseudonym: Azabenzene, Azine
TSCA Inventory: listed
REACH Reg. No.: 01-2119493105-40-xxxx

EC No.: 203-809-9 Indice No.: 613-002-00-7 RTECS: UR8400000 MFCD: 00011732

KE No.: KE-29929 Concentration: 44 - <60 %

acc. CLP (GHS): H225, Flam. Liq. 2, H302, Acute Tox. 4 oral, H312, Acute Tox. 4 derm., H332, Acute Tox. 4 inh.

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. Take to a doctor, in a raised position if there are breathing difficulties.

4.1.1 After SKIN Contact

Remove contaminated clothing immediately. Rinse the affected skin or mucous membrane thoroughly for min. 15 minutes under running water. (If possible) use soap. Avoid neutralisation. Then apply a loose bandage.

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. If vomiting and if insensible place patient in recovery position and keep airways free. Administer a Dexamethasone spray as soon as possible. Ensure quiet, warmth, and provide resuscitation if necessary. In the event of respiratory distress ensure that the patient inhales oxygen. Secure the breathing, heart and circulatory function. ---

4.1.4 After ORAL Intake

After oral intake lots of water with activated charcoal supplement should be drunk after it has been ingested. Do not induce vomiting under any circumstances. Do not make any efforts to neutralise it. Contact medical advice for possible consequences. ---

4.2 Most important symptoms and effects, both acute and delayed

Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma symptoms or breathing difficulties if inhaled. ---

4.3 Indication of any immediate medical attention and special treatment needed

CORROSIVE DAMAGE: After SKIN CONTACT rinse with water for a long time. Efforts to neutralise the substance can frequently make matters worse. Apply glucocorticosteroides following inflammatory reactions. 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. After INTAKE administer aluminium oxide drug suspensions. Administer a prophylaxis to counter pulmonary oedema following the INGESTION of corrosive aerosols. In the event of RESPIRATORY DISTREES ensure that the patient inhales oxygen. Inform patient respectively further measures and the possibility of long-term damages. ---

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

DANGER: Highly flammable (GHS regulation). Forms explosive vapour-air mixtures. Formation of hazardous and caustic vapour-air mixtures possible. ---

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5.3 Advice for firefighters

No, for listed product. Product package burns like paper or plastic. Spray any vapours released with water. Retent fire water. Use only acid-resistant safety equipment.

For great amount - if necessary - protective breathing apparatus which is independent of the ambient air (isolated equipment), and sealed protective clothing is necessary in the event of a large-scale formation of toxic substances.

5.4 Additional information

Danger for environment only in the event of a large-scale leakage or formation of hazardous substances. ---

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Do not breathe vapours. Wear suitable protective gloves (see 8.2.2). 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

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

see information in section 5.4 ---

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Handling in accordance with the test instruction, that comes with the product. Use only in well-ventilated working areas.

7.2 Conditions for safe storage, including any incompatibilities

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

Storage class (VCI): Water hazard class (DE):

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

7 g Cyanide R1

Chemical: CAS No.: 127-65-1 chloramine 7

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

OSHA: not listed

Chemical: phosphates (buffer salts) CAS No : -

12 g Cyanide R2

barbituric acid CAS No.: 67-52-7 Chemical:

100 mL Cyanide R3

pyridine CAS No.: 110-86-1 Chemical:

PNEC (fresh water): 300 µg/L PNEC = Predicted No Effected Concentration

[TWA] 5 ppm / 15 mg/m³ EU value: TRGS 900 (DE): [8h] 5 ppm / 15 mg/m³ E/e respirable

Short-term exposure factor: 2 (II)

skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

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> SUVA(CH) MAK value: 5 ppm / 15 mg/m³ NIOSH:

i: [TWA] 5 ppm / 15 mg/m³
[TWA] Time-weighted average to a reference period of 8 hours, [STEL] Short-term exposure limit related to a 15-minute period

[TWA] 5 ppm / 15 mg/m³

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

Use for open access of these substances for example a protection filter, class A/AX. 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

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

8.2.4

Recommended to avoid clothing damage, and to avoid contamination with these hazards.

8.2.5

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

7 a Cvanide R1

Appearance: powder (solid) Colour: colourless Odor: chloric

6-8 Solubility in water: 0-30 %

12 g Cyanide R2

Appearance: powder (solid) Colour: white Odor: odorless

Melting point: 250-252 °C

100 mL Cyanide R3

Odor: like pyridine Appearance: liquid Colour: colourless

pH: 8-9 Specific gravity: 0,99 g/cm³

Solubility in water: 0-100 %

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

Substances are very volantile and form flammable vapour-air mixtures. ---

SECTION 10: Stability and reactivity

10.1 Reactivity

no further data available.

10.2 Chemical stability

No known instability.

10.3 Possibility of hazardous reactions

Can react violently with organic material. No further data available.

10.4 Conditions to avoid

Not necessary. Observe labeled storage temperature. ---

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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.

7 g Cyanide R1

Chemical: chloramine T CAS No.: 127-65-1

TSCA Inventory: California Proposition 65 List: not listed listed Australia NICNAS: not listed Canada CEPA 1999: DSL Yes

Japan CSCL/PRTR: not listed, Japan PDSCL: not listed

Japan ISHL: not listed South Korea TCCA: not listed Korea Exist.Chem.Inventory: 2000-3-1539 LD50_{orl rat}: ~1000 mg/kg

Acute Effects: Cause after oral intake, impairments of health when ingested in small quantities.

Chronic Effects: May cause sensitization by skin contact, also in repeated contact of small amounts. May cause allergy or asthma

symptoms or breathing difficulties if inhaled.

Chemical: phosphates (buffer salts) CAS No .: -

TSCA Inventory: all listed Korea Exist.Chem.Inventory: listed > 2000 mg/kg LD50_{orl rat}:

12 g Cyanide R2

Chemical: barbituric acid CAS No.: 67-52-7

TSCA Inventory: listed California Proposition 65 List: Barbiturates listed, developmental

Korea Exist.Chem.Inventory: 97-3-1

100 mL Cyanide R3

Chemical: pyridine CAS No.: 110-86-1

TSCA Inventory: California Proposition 65 List: listed cancer **Exposure Routes:** inhalation, skin absorption, ingestion, skin and/or eye contact Target Organs: Eyes, skin, central nervous system, liver, kidneys, gastrointestinal tract,

Symptoms: irritation eyes; headache, anxiety, dizziness, insomnia; nausea, anorexia; dermatitis; liver, kidney

damage

Japan CSCL/PRTR: PRTR: ≥1,0% class I Japan ISHL: listed ≥1,0%/≥0,1%, Korea Exist.Chem.Inventory: KE-29929 LD50_{orl rat}: 800-1600 mg/kg

[4h] 4900 ppm LC_Lowihl rat: LC_Loworl gpg: 4000 mg/kg 500 mg/kg LC_Loworl hmn: LC50_{ihl rat}: 28500_{1h} mg/m³

LD50_{drm rbt}: 1000-2000 mg/kg
Acute Effects: Cause after oral intake, inhalation of vapours/dust, skin contact, impairments of health when ingested in small

quantities

TRGS 905 (DE): [DFG] carc. 3B

SECTION 12: Ecological information

12.1 **Toxicity**

Following information is valid for pure substances.

7 g Cyanide R1

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> Chemical: chloramine T

Avoid contact of substance/mixture to environment.

Water hazard class (DE): 2 WGK No.: 0640

Storage class (VCI): 8 A

phosphates (buffer salts) CAS No .: -Chemical:

Water hazard class (DE): 13 Storage class (VCI):

12 g Cyanide R2

Chemical: barbituric acid CAS No.: 67-52-7

100 mL Cyanide R3

Chemical: pyridine CAS No.: 110-86-1

PNEC (fresh water):
PNEC = Predicted No Effected Concentration 300 µg/L

LC50_{fish/96h}: [EC50 4h] 560-1000 mg/L

EC50_{daphnia/48h}: 320 mg/L IC50_{scenedesmus} quadricauda/72h: IC5/7d: 120 mg/L

EC10pseudomonas putita/16h: Water hazard class (DE): [EC50 72h] 320 mg/L mg/L WGK No.: 0179

Dispersion coefficient_(octanol-water): 0.64 Storage class (VCI):

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

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: 14.4. Packing group:

Road transport

Classification code: Tunnel restriction code: 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

F-A, S-P EmS: Storage category: Α

Or use Alternative declaration for transportation:

14.1 UN number: 1993 14.2 UN proper shipping name: Flammable liquid, n.o.s. (pyridine mixture)

14.3 Class: Packing group:

Road transport

Classification code:

Ε Limited Quantity: 1 L Tunnel restriction code:

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Excepted Quantity: E 2 Special instructions: 640C

Air transport

PAX: 353 max. weight PAX: 5 L

CAO: 364 max. weight CAO: 60 L

Maritime transport

EmS: F-E, S-E Storage category: B

14.1 UN number: 3263 14.2 UN proper shipping name: Corrosive solid, basic, organic, n.o.s. (chloramine T mixture)

F

14.3 Class: 8 14.4 Packing group: I

Road transport

Classification code: C8

Limited Quantity: 1 Kg Tunnel restriction code:

Excepted Quantity: E 2

Air transport

PAX: 859 max. weight PAX: 15 Kg CAO: 863 max. weight CAO: 50 Kg 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

H225 Highly flammable liquid and vapour.

H302 Harmful if swallowed. H312 Harmful in contact with skin.

H314 Causes severe skin burns and eye damage.

H332 Harmful if inhaled.

H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

EUH031 Contact with acids liberates toxic gas.

16.1.2 List of relevant P phrases

P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233 Keep container tightly closed.
P260D Do not breathe vapours.
P260sh Do not breathe dust/vapours.
P261sh Avoid breathing dust/vapours.

P264W Wash with water thoroughly after handling. P280sh Wear protective gloves/eye protection.

P301+312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.

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Safety Data Sheet

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

REF: 91830 NANOCOLOR Cyanide Page: 10/10 Printing date: 01.10.2019 Date of issue: 02.01.2019 IF ON SKIN: Wash with plenty of water. P302+352 P303+361+353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. IF INHALED: Remove person to fresh air and keep comfortable for breathing. P304+340 P305+351+338 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. P310 P330 Rinse mouth. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. P342+311

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**

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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

TRGS 907, German engineering rules governing listing of substances and causes of sensitizations, updated November 2011

KÜHN. BIRETT Merkblätter Gefährliche Arbeitsstoffe (Data Sheets of Hazardous Substances)

Revisions/Updates

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

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