

# Safety Data Sheet

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

REF: 91851

NANOCOLOR Cobalt

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Printing date: 02.06.2020

Date of issue: 14.09.2018

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

### 1.1 Product identifier

REF 91851  
 Product name NANOCOLOR Cobalt

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 Cobalt R1  
 1 x 100 mL Cobalt R2  
 1 x 100 mL Cobalt 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 GHS07

Signal word DANGER

Hazard identification	Hazard classes/categories
H225	Flam. Liq. 2
H290	Met. Corr. 1
H315	Skin Irrit. 2
H319	Eye Irrit. 2
H335	STOT SE 3

### 2.1 Classification of the substance or mixture

100 mL Cobalt R1

Signal word Do not need labelling as hazardous  
 -

No hazard class

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## 100 mL Cobalt R2



GHS02

Signal word

DANGER

**Hazard identification**

**Hazard classes/categories**

H225

Flam. Liq. 2

## 100 mL Cobalt R3



GHS07

Signal word

WARNING

**Hazard identification**

**Hazard classes/categories**

H290

Met. Corr. 1

H315

Skin Irrit. 2

H319

Eye Irrit. 2

H335

STOT SE 3

## 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** 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).

Metal corrosive solutions **do not have to** be labelled with GHS symbol, signal word, H and P phrases **until 125 mL** (EU 1272/2008 Annex I - 1.5.2.1.3).

### 100 mL Cobalt R1

Do not need labelling as hazardous

Signal word: -

### 100 mL Cobalt R2



GHS02

Signal word: DANGER

### 100 mL Cobalt R3



GHS07

Signal word: WARNING

## 2.3 Other hazards

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## Possible hazards from physicochemical properties

In the case of pH values are less than 5 or higher than 9 then it is irritant. Flammable properties. ---

## Information pertaining to particular risks to human and possible symptoms

Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities. ---

## Information pertaining to particular risks to the environment

---

## Other hazards

---

## SECTION 3: Composition/information on ingredients

### 3.1 Substances or 3.2 Mixtures

#### 100 mL Cobalt R1

Chemical: *phosphate buffer solution*

CAS No.: -

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

Formula:  $K/Na_{1-3} H_{2-0} PO_4 \cdot x H_2 O$ 

TSCA Inventory: all listed

KE No.: listed

Concentration: 5 - &lt;20 %

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

#### 100 mL Cobalt R2

Chemical: *ethanol*

CAS No.: 64-17-5

(denatured with 1%IPA/1%MEK, acc.2016/1867/EU)

Classification: H225, Flam. Liq. 2

Formula:  $C_2 H_6 O; C_2 H_5 OH$ 

Pseudonym: ethyl alcohol, methylated spirit

TSCA Inventory: listed

REACH Reg. No.: 01-2119457610-43-xxxx

EC No.: 200-578-6

Indice No.:

603-002-00-5

RTECS: KQ6300000

MFCD:

00003568

KE No.: KE-13217

Concentration: 90 - &lt;98 %

acc. CLP (GHS): H225, Flam. Liq. 2

Chemical: *4-[5-chloro-pyridyl-(2)-azo]-m-phenyldiamine*

CAS No.: -

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

TSCA Inventory: LVE

Concentration: &lt; 1.00 %

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

#### 100 mL Cobalt R3

Chemical: *hydrochloric acid*

CAS No.: 7647-01-0

Classification: H290, Met. Corr. 1, H314, Skin Corr. 1B, H331, Acute Tox. 3 inh.

Formula:  $HCl \cdot H_2 O$ 

Pseudonym: aqueous hydrogen chloride

TSCA Inventory: listed

REACH Reg. No.: 01-2119484862-27-xxxx

EC No.: 231-595-7

Indice No.:

017-002-01-X

RTECS: MW4025000

KE No.: KE-20189, &gt;10% Toxic 97-1-203, Acc. Precaution Chem.

Concentration: 10 - &lt;25 %

acc. CLP (GHS): H290, Met. Corr. 1, H315, Skin Irrit. 2, H319, Eye Irrit. 2, H335, STOT SE 3

### 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

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## 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.

#### 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 with eye washing bottle, eye douche or running water (protect intact eye).

#### 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

No additionally recommendations. ---

## 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. ---

### 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. Regular staff training is necessary.

### 6.2 Environmental precautions

not necessary

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

Bind any escaping liquid with inert absorbent.  
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): 3

Water hazard class (DE): 1

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**7.2.1 Requirements for stock rooms and containers**  
Keep original product packages tightly closed during handling and storage.

**7.3 Specific end use(s)**  
Product for analytical use.

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**100 mL Cobalt R1**

Chemical: *phosphate buffer solution*

CAS No.: -

**100 mL Cobalt R2**

Chemical: *ethanol*

CAS No.: 64-17-5

DNEL: [derm] 343 mg/kg; [inh] 950 mg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 0.96 mg/L

PNEC = Predicted No Effect Concentration

TRGS 900 (DE): 200 mL/m<sup>3</sup> / 380 mg/m<sup>3</sup>  
E/e respirable

Short-term exposure factor: 4 (II), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 500 ppm / 960 mg/m<sup>3</sup>

NIOSH: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>

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

OSHA: [TWA] 1000 ppm / 1900 mg/m<sup>3</sup>

Chemical: *4-[5-chloro-pyridyl-(2)-azo]-m-phenyldiamine*

CAS No.: -

**100 mL Cobalt R3**

Chemical: *hydrochloric acid*

CAS No.: 7647-01-0

DNEL: [inh] 8 mg/m<sup>3</sup>

DNEL = Derived No-Effect Level (for workers)

PNEC (fresh water): 36 µg/L

PNEC = Predicted No Effect Concentration

EU value: [TWA] 5 ppm / 8 mg/m<sup>3</sup>; [STEL] 10 ppm / 15 mg/m<sup>3</sup>

TRGS 900 (DE): 2 mL/m<sup>3</sup> / 3 mg/m<sup>3</sup>  
E/e respirable

Short-term exposure factor: 2 (I), Y  
skin resorptive (H), respiratory sensitizable (Sa), skin sensitizable (Sh), teratogenic (Z) not securely excluded / (Y) certainly excluded

SUVA(CH) MAK value: 2 ppm / 3\* mg/m<sup>3</sup>

NIOSH: [C] 5 ppm / 7 mg/m<sup>3</sup>

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

OSHA: List of highly hazardous chemicals, toxics and reactives Yes (TQ = 5000 lbs) n/a; TWA 5 ppm / 7 mg/m<sup>3</sup>

### 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.

**8.2.4 Skin protection**  
Not necessary.

**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.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

#### 100 mL Cobalt R1

Appearance: liquid	Colour: colourless	Odor: odorless
pH: 5-6		
Solubility in water: 0-100 %		

#### 100 mL Cobalt R2

Appearance: liquid	Colour: yellow	Odor: alcoholic
pH: 6-8		
Flash point: 18 °C		
Specific gravity: 0,79 g/cm <sup>3</sup>		
Solubility in water: 0-100 %		

#### 100 mL Cobalt R3

Appearance: liquid	Colour: colourless	Odor: penetrative
pH: 0		
Specific gravity: 1,10 g/cm <sup>3</sup>		
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 volatile 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

No further data available.

### 10.4 Conditions to avoid

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 Cobalt R1

Chemical:	<i>phosphate buffer solution</i>	CAS No.: -
TSCA Inventory:	all listed	
Korea Exist.Chem.Inventory:	listed	

#### 100 mL Cobalt R2

Chemical:	<i>ethanol</i>	CAS No.: 64-17-5
TSCA Inventory:	listed	California Proposition 65 List: not listed
ACGIH:	1000 ppm	
Exposure Routes:	inhalation, ingestion, skin and/or eye contact	
Target Organs:	Eyes, skin, respiratory system, central nervous system, liver, blood, reproductive system	
Symptoms:	irritation eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough;	

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liver damage; anemia; reproductive, teratogenic  
 Australia NICNAS: not listed Canada CEPA 1999: DSL yes  
 Japan CSCL/PRTR: not listed, Japan PDSCCL: not listed  
 Japan ISHL: listed  $\geq 0,1\%$ / $\geq 0,1\%$ , Article 57-2 (SDS required)  
 South Korea TCCA: not listed  
 Korea Exist.Chem.Inventory: KE-13217  
 LD50<sub>orl rat</sub>: 6200 mg/kg  
 LC<sub>LoWihl gpg</sub>: 21.9 g/m<sup>3</sup>  
 LC<sub>LoWorl hmn</sub>: 1400 mg/kg  
 LC50<sub>ihl mouse</sub>: [4h] 39 g/m<sup>3</sup>  
 LC50<sub>ihl rat</sub>: [10h] 20 g/m<sup>3</sup>  
 LD50<sub>drm rbt</sub>: 20 000 mg/kg  
 LD50<sub>oral mouse</sub>: 3450 mg/kg

TRGS 905 (DE): K5, M5, R<sub>F</sub> C

Chemical: 4-[5-chloro-pyridyl-(2)-azo]-m-phenylendiamine CAS No.: -  
 TSCA Inventory: LVE

## 100 mL Cobalt R3

Chemical: hydrochloric acid CAS No.: 7647-01-0  
 TSCA Inventory: listed California Proposition 65 List: not listed  
 Exposure Routes: inhalation, ingestion (solution), skin and/or eye contact  
 Target Organs: Eyes, skin, respiratory system  
 Symptoms: irritation nose, throat, larynx; cough, choking; dermatitis; solution: eye, skin burns; liquid: frostbite; in animals: laryngeal spasm; pulmonary ede  
 Australia NICNAS: not listed Canada CEPA 1999: DSL Yes  
 Japan CSCL/PRTR: not listed, Japan PDSCCL: Deleterious Substance  
 Japan ISHL: listed  $\geq 0,2\%$ / $\geq 0,1\%$ , Article 57-2 (SDS required)  
 South Korea TCCA: Accident Precaution Chemical Yes  
 Korea Exist.Chem.Inventory: KE-20189, >10% Toxic 97-1-203, Acc. Precaution Chem.  
 LD50<sub>orl rat</sub>: 900 mg/kg  
 LC50<sub>drm rbt</sub>: >5010 mg/kg  
 Acute Effects: Cause after inhalation of vapours/dust, impairments of health when ingested in small quantities.

## SECTION 12: Ecological information

### 12.1 Toxicity

Following information is valid for pure substances.

#### 100 mL Cobalt R1

Chemical: phosphate buffer solution CAS No.: -  
 Water hazard class (DE): 1  
 Storage class (VCI): 12

#### 100 mL Cobalt R2

Chemical: ethanol CAS No.: 64-17-5  
 PNEC (fresh water): 0.96 mg/L  
 PNEC = Predicted No Effected Concentration  
 LC50<sub>daphnia magna/48h</sub>: >100 mg/L  
 LC50<sub>pimephales promelas/96h</sub>: 13400 - 15100 mg/L  
 LC50<sub>leuciscus idus/96h</sub>: [48h] 8140 mg/L  
 LC50<sub>fish/96h</sub>: 13 g/L  
 EC50<sub>daphnia/48h</sub>: 9.3-14.2 g/L  
 IC50<sub>scenedesmus quadricauda/72h</sub>: [7d] 5000 mg/L  
 EC10<sub>pseudomonas putita/16h</sub>: [EC5] 6500 mg/L  
 Water hazard class (DE): 1 WGK No.: 0096  
 Dispersion coefficient (octanol-water): -0.31  
 Storage class (VCI): 3

Chemical: 4-[5-chloro-pyridyl-(2)-azo]-m-phenylendiamine CAS No.: -

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**100 mL Cobalt R3**

Chemical:	<i>hydrochloric acid</i>	CAS No.: 7647-01-0
PNEC <sup>(fresh water)</sup> :	36 µg/L	
PNEC = Predicted No Effect Concentration		
LC50 <sup>fish/96h</sup> :	24.6 mg/L	
EC50 <sup>daphnia/48h</sup> :	0.492 mg/L	
EC50 <sup>pseudokirchneriella subcapitata/72h</sup> :	0.78 mg/L	
Water hazard class (DE):	1	WGK No.: 0238
Storage class (VCI):	8 B	

- 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.

## SECTION 14: Transport information

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

Or use **Alternative declaration for transportation:**

<b>14.1 UN number:</b> 1993	<b>14.2 UN proper shipping name:</b> Flammable liquid, n.o.s. (ethanol mixture)
<b>14.3 Class:</b> 3	<b>14.4 Packing group:</b> II
<i>Road transport</i>	
Classification code: F1	Tunnel restriction code: E
Limited Quantity: 1 L	Special instructions: 640C
Excepted Quantity: E 2	
<i>Air transport</i>	
PAX: 353	max. weight PAX: 5 L
CAO: 364	max. weight CAO: 60 L
<i>Maritime transport</i>	
EmS: F-E, S-E	Storage category: B
<b>14.1 UN number:</b> 3264	<b>14.2 UN proper shipping name:</b> Corrosive liquid, acidic, inorganic, n.o.s. (hydrochloric acid solution)
<b>14.3 Class:</b> 8	<b>14.4 Packing group:</b> II
<i>Road transport</i>	
Classification code: C1	Tunnel restriction code: E
Limited Quantity: 1 L	
Excepted Quantity: E 2	
<i>Air transport</i>	
PAX: 851	max. weight PAX: 1 L
CAO: 855	max. weight CAO: 30 L





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*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](http://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.  
 H290 May be corrosive to metals.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

#### 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.  
 P261sh Avoid breathing dust/vapours.  
 P280sh Wear protective gloves/eye protection.  
 P390 Absorb spillage to prevent material damage.  
 P403+233 Store in a well-ventilated place. Keep container tightly closed.

### 16.2 Training advice

Regular safety training.

### 16.3 Recommended restriction on use

Only for professional user.  
 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, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress  
 Regulation 669/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress  
 Regulation 1480/2018/EU, 4<sup>th</sup> adaptation of CLP regulation to technical and scientific progress  
 TRGS 900, German engineering rules governing limits in air at work, updated 03/2019

[www.mn-net.com](http://www.mn-net.com)



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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

2017-08 Adaption of new ethanol denaturation 2016/1867/EU