

Safety data sheet according to 1907/2006/EC, Article 31

Printing date 15.11.2023

Version number 14 (replaces version 13)

Revision: 15.11.2023

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

· **1.1 Product identifier**

· **Product name: Verification Standard 560 nm / Reference Standard pH 7.5**

· **Catalog number:** 215654, 275670(A), 215665(A), 215670(560 nm), 215640(560 nm), 215650(560 nm), 215680(560 nm)

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

· **Application of the substance / the preparation:** Coloured Standard Solution for calibration purposes

· **1.3 Details of the supplier of the safety data sheet**

· **Supplier:**

Tintometer GmbH
Schleefstraße 8-12
44287 Dortmund
Made in Germany
www.lovibond.com

phone: +49 (0)231 94510-0
e-mail: sales@lovibond.com

The Tintometer Limited
Lovibond® House
Sun Rise Way
Amesbury
Wiltshire SP4 7GR
United Kingdom

phone : +44 1980 664800
e-mail: SDS@lovibond.uk

· **Informing department:**

e-mail: sds@lovibond.com
Product Safety Department

· **1.4 Emergency telephone number:**

+44 1235 239670
Languages: English

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**

· **Classification according to Regulation (EC) No 1272/2008**



GHS02 flame

Flam. Liq. 3 H226 Flammable liquid and vapour.



GHS07

Eye Irrit. 2 H319 Causes serious eye irritation.

· **2.2 Label elements**

· **Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the GB CLP regulation.

· **Hazard pictograms**



GHS02

GHS07

· **Signal word** Warning

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Hazard statements

H226 Flammable liquid and vapour.

H319 Causes serious eye irritation.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280 Wear protective gloves / eye protection.

P233 Keep container tightly closed.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 If eye irritation persists: Get medical advice/attention.

2.3 Other hazards

Vapours have anaesthetic effect.

At long or repeated contact with skin it may cause dermatitis due to the degreasing effect of the solvent.

Vapours of the product are heavier than air and may accumulate on the ground, in mines, drains or cellars with higher concentration.

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

Determination of endocrine-disrupting properties

The product does not contain substances with endocrine disrupting properties.

SECTION 3: Composition/information on ingredients

3.2 Mixtures
Description: aqueous solution

Dangerous components:

CAS: 67-63-0	propan-2-ol	⚠ Flam. Liq. 2, H225; ⚠ Eye Irrit. 2, H319; STOT SE 3, H336	10-<20%
EINECS: 200-661-7			
Index No: 603-117-00-0			
Reg.nr.: 01-2119457558-25-XXXX			

Additional information For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures
General information Instantly remove any clothing soiled by the product.

After inhalation Supply fresh air; consult doctor in case of symptoms.

After skin contact Instantly wash with water and soap and rinse thoroughly.

After eye contact Rinse opened eye for several minutes (at least 15 min) under running water. Then consult doctor.

After swallowing

Rinse out mouth and then drink 1-2 glasses of water.

Seek medical treatment.

4.2 Most important symptoms and effects, both acute and delayed:

irritations

after inhalation:

headache

drowsiness

dizziness

coughing

breathing difficulty

after swallowing:

sickness

vomiting

Danger Condition may deteriorate with alcohol consumption.

4.3 Indication of any immediate medical attention and special treatment needed: No further relevant information available.

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SECTION 5: Firefighting measures

- **5.1 Extinguishing media**
- **Suitable extinguishing agents**
CO₂, extinguishing powder or water spray jet. Fight larger fires with water spray jet or alcohol-resistant foam.
- **For safety reasons unsuitable extinguishing agents** Water with a full water jet.
- **5.2 Special hazards arising from the substance or mixture**
Can form explosive gas-air mixtures.
combustible
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide (CO) and carbon dioxide (CO₂)
- **5.3 Advice for firefighters**
- **Protective equipment:**
Wear self-contained breathing apparatus.
Wear full protective suit.
- **Additional information**
Collect contaminated fire fighting water separately. It must not enter drains.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

SECTION 6: Accidental release measures

- **6.1 Personal precautions, protective equipment and emergency procedures**
- **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Ensure adequate ventilation
- **Advice for emergency responders:** Protective equipment: see section 8
- **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Prevent material from reaching sewage system, holes and cellars.
Damp down gases/fumes/haze with water spray jet.
- **6.3 Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose of contaminated material as waste according to item 13.
- **6.4 Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for information on disposal.

SECTION 7: Handling and storage

- **7.1 Precautions for safe handling**
- **Advice on safe handling:**
Use only in well ventilated areas.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Protect from heat.
Keep ignition sources away - Do not smoke.
Take action to prevent static discharges.
- **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Do not eat, drink or smoke when using this product.
- **7.2 Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and containers:**
Store only in unopened original containers.
Do not use light alloy containers.
- **Information about storage in one common storage facility:**
Store away from oxidising agents.
see chapter 10

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Further information about storage conditions:

- Protect from frost.
- Store in cool, dry conditions in well sealed containers.
- Protect from heat and direct sunlight.
- Store in the dark.
- Protect from the effects of light.
- Protect from humidity and keep away from water.

- **Recommended storage temperature:** 20°C +/- 5°C

- **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- **Components with limit values that require monitoring at the workplace:**

CAS: 67-63-0 propan-2-ol

WEL (Great Britain)	Short-term value: 1250 mg/m ³ , 500 ppm Long-term value: 999 mg/m ³ , 400 ppm
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- **Regulatory information** WEL (Great Britain): EH40/2020

DNELs

Derived No Effect Level (DNEL)

CAS: 67-63-0 propan-2-ol

Oral	DNEL	26 mg/kg (Consumer / long-term / systemic effects)
Dermal	DNEL	888 mg/kg (Worker / long-term /systemic effects)
		319 mg/kg (Consumer / long-term / systemic effects)
Inhalative	DNEL	500 mg/m ³ (Worker / long-term /systemic effects)
		89 mg/m ³ (Consumer / long-term / systemic effects)

- **Recommended monitoring procedures:**

Methods for measurement of the workplace atmosphere have to correspond to the requirements of norms DIN EN 482 and DIN EN 689.

PNECs

Predicted No Effect Concentration (PNEC)

CAS: 67-63-0 propan-2-ol

PNEC	140.9 mg/l (Marine water)
	140.9 mg/l (Fresh water)
PNEC	28 mg/kg (Soil)
	552 mg/kg (Marine sediment)
	552 mg/kg (Fresh water sediment)

- **Additional information:** The lists that were valid during the compilation were used as basis.

8.2 Exposure controls

- **Engineering measures:**

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.

- **Individual protection measures, such as personal protective equipment**

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.

- **Eye/face protection** Wear safety glasses in case of breakage / leakage.

- **Hand protection**

Avoid direct contact with the product/ the mixture by corresponding measures.

Wear gloves in case of breakage / leakage.

After use of gloves apply skin-cleaning agents and skin cosmetics.

- **Material of gloves**

nitrile rubber, NBR

Recommended thickness of the material: ≥ 0.11 mm

- **Penetration time of glove material**

Value for the permeation: Level = 1 (< 10 min)

The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.

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- **Other skin protection (body protection):** Protective work clothing.
- **Breathing equipment:** Use breathing protection against the effects of fumes/dust/aerosol.
- **Recommended filter device for short term use:** Filter A
- **Environmental exposure controls**
Do not allow product to reach sewage system or water bodies.
Risk of explosion.

SECTION 9: Physical and chemical properties

- **9.1 Information on basic physical and chemical properties**
- **Physical state** Fluid
- **Form:** Solution
- **Colour:** Pink
- **Odour:** Alcohol-like
- **Odour threshold:** CAS 67-63-0: 1.0-196.1 ppm (Merck)
- **Melting point/Freezing point:** Not determined.
- **Boiling point or initial boiling point and boiling range** 82°C (CAS 67-63-0, CAS: 67-63-0 propan-2-ol)
- **Flammability** Flammable liquid and vapour.
- **Explosive properties:** Product is not explosive. However, formation of explosive air/steam mixtures is possible.
- **Lower and upper explosion limit**
- **Lower:** 2 Vol % (CAS 67-63-0, CAS: 67-63-0 propan-2-ol)
- **Upper:** 13.4 Vol % (CAS 67-63-0, CAS: 67-63-0 propan-2-ol)
- **Flash point:** 32°C (DIN EN ISO 13736)
- **Auto-ignition temperature:** Not determined.
- **Decomposition temperature:** Not applicable.
- **pH at 20°C** 8.2
- **Kinematic viscosity** Not determined.
- **Solubility**
- **Water:** Fully miscible
- **Partition coefficient n-octanol/water (log value)** Not applicable (mixture).
- **Vapour pressure at 20°C:** 43 hPa (CAS 67-63-0, CAS: 67-63-0 propan-2-ol)
Not determined.
- **Density and/or relative density**
- **Density at 20°C:** 0.98 g/cm³
- **Relative density:** Not determined.
- **Relative gas density** Not determined.
- **Particle characteristics** Not applicable (liquid).

· 9.2 Other information

- **Information with regard to physical hazard classes**
- **Corrosive to metals** Void
- **Other safety characteristics**
- **Oxidising properties:** none
- **Additional information**
- **Solids content:** < 1 %
- **Solvent content:**
- **Organic solvents:** 10-20 %
- **Water:** 80-90 %

SECTION 10: Stability and reactivity

- **10.1 Reactivity**
Fumes can combine with air to form an explosive mixture.
Possible formation of peroxide
- **10.2 Chemical stability** Stable at ambient temperature (room temperature).
- **10.3 Possibility of hazardous reactions**
Reacts with alkaline metals
Reacts with oxidizing agents
Reacts with alkaline earth metals
Exothermic reaction with acids

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- **10.4 Conditions to avoid Heating.**
- **10.5 Incompatible materials:**
 - light metals
 - rubber
 - various plastics
- **10.6 Hazardous decomposition products:**
 - peroxides
 - In case of fire: see section 5.

SECTION 11: Toxicological information

- **11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008**
- **Acute toxicity** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:**
The following statements refer to the individual components.

CAS: 67-63-0 propan-2-ol

Oral	LD50	5045 mg/kg (rat) (RTECS)
	LDLo	3570 mg/kg (human) (RTECS)
Dermal	LD50	12800 mg/kg (rabbit) (RTECS)
Inhalative	LC50/4h	37.5 mg/l (rat) (OECD 403, vapour)

- **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
- **Serious eye damage/irritation** Causes serious eye irritation.
- **Information on components:**
CAS 67-63-0: chronic: dermatitis

CAS: 67-63-0 propan-2-ol

Irritation of skin	OECD 404	(rabbit: no irritation)
Irritation of eyes	OECD 405	(rabbit: irritation)

- **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

Information on components:
CAS: 67-63-0 propan-2-ol

Sensitisation	OECD 406	(guinea pig: negative) (IUCLID)
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- **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
- **Carcinogenicity** Based on available data, the classification criteria are not met.
- **Reproductive toxicity** Based on available data, the classification criteria are not met.

Information on components:

CAS 67-63-0: Did not show carcinogenic effects in animal experiments.
 OECD 414: Teratogenicity testing
 OECD 473: Mutagenicity testing
 OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 67-63-0 propan-2-ol

OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (Salmonella typhirium, IUCLID)
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test)

- **STOT (specific target organ toxicity) -single exposure** Based on available data, the classification criteria are not met.
- **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
- **Aspiration hazard** Based on available data, the classification criteria are not met.

Information on likely routes of exposure

The main route of uptake for 2-propanol under commercial conditions is through the respiratory tract. [GESTIS]

Additional toxicological information:

Inhalation of concentrated vapours as well as oral intake will lead to anaesthesia-like conditions and headache, dizziness, etc.

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In addition to local irritant manifestations, there is a narcotic effect when inhaling high concentrations, with the danger of central respiratory arrest.

CAS: 67-63-0 propan-2-ol

(source: GESTIS)

Main toxic effects:

acute: irritating effect of the vapors (depending on the concentration) on the mucous membranes; irritating effect of the liquid on the eyes and mucous membranes of the digestive tract.

Systemic effects after massive intoxication: disturbance of the central nervous and cardiovascular systems

chronic: skin damage (very rare), no reports of systemic effects from exposure under industrial conditions

11.2 Information on other hazards

· **Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

Other information

According to the information available to us, the chemical, physical and toxicological properties of the substances mentioned in Chapter 3 have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity
Aquatic toxicity:
CAS: 67-63-0 propan-2-ol

EC50 13299 mg/l/48h (Daphnia magna)
(IUCLID)

EC5 4930 mg/l (Entosiphon sulcatum) (72h)

IC50 >1000 mg/l/72h (Desmodesmus subspicatus)
(IUCLID)

LC50 1400 mg/l/96h (bluegill)
(ECOTOX)

Bacterial toxicity:
CAS: 67-63-0 propan-2-ol

EC5 1050 mg/l (Pseudomonas putida) (16h)

12.2 Persistence and degradability
CAS: 67-63-0 propan-2-ol

OECD 301 E 95 % / 21 d, aerob (readily biodegradable) (Modified OECD Screening Test)

12.3 Bioaccumulative potential

Pow = n-octanol/wasser partition coefficient

log Pow < 1 = Does not accumulate in organisms.

CAS: 67-63-0 propan-2-ol

log Pow 0.05 (.) (OECD 107)

· **12.4 Mobility in soil** No further relevant information available.

12.5 Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of Regulation (EC) No. 1907/2006.

· **12.6 Endocrine disrupting properties** The product does not contain substances with endocrine disrupting properties.

· **12.7 Other adverse effects** Avoid transfer into the environment.

Water hazard:

Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.

Must not reach sewage water or drainage ditch undiluted or unneutralised.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Recommendation

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

Hand over to disposers of hazardous waste.

European waste catalogue

16 05 06* laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals

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- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

<ul style="list-style-type: none"> · 14.1 UN number or ID number · ADR, IMDG, IATA 	UN1993
<ul style="list-style-type: none"> · 14.2 UN proper shipping name · ADR · IMDG, IATA 	1993 FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL (ISOPROPYL ALCOHOL)) FLAMMABLE LIQUID, N.O.S. (ISOPROPANOL)
<ul style="list-style-type: none"> · 14.3 Transport hazard class(es) · ADR <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> · Class · Label 	3 (F1) Flammable liquids. 3
<ul style="list-style-type: none"> · IMDG, IATA <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> · Class · Label 	3 Flammable liquids. 3
<ul style="list-style-type: none"> · 14.4 Packing group · ADR, IMDG, IATA 	III
<ul style="list-style-type: none"> · 14.5 Environmental hazards: 	Not applicable.
<ul style="list-style-type: none"> · 14.6 Special precautions for user · Kemler Number: · EMS Number: · Stowage Category 	Warning: Flammable liquids. 30 F-E, <u>S-E</u> A
<ul style="list-style-type: none"> · 14.7 Maritime transport in bulk according to IMO instruments 	Not applicable.
<ul style="list-style-type: none"> · Transport/Additional information: 	
<ul style="list-style-type: none"> · ADR · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
<ul style="list-style-type: none"> · Transport category · Tunnel restriction code 	3 D/E
<ul style="list-style-type: none"> · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) 	5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

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SECTION 15: Regulatory information

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

Poisons Act UK

Regulated explosives precursors

None of the ingredients is listed.

Regulated poisons

None of the ingredients is listed.

Reportable explosives precursors

None of the ingredients is listed.

Reportable poisons

Products containing less than 1% of any of the reportable substances are in general of no concern.

Regulation (EU) 2019/1148 on the marketing and use of explosives precursors not regulated

Regulation (EU) No 649/2012 concerning the export and import of hazardous chemicals (PIC)

None of the ingredients is listed.

Regulation (EC) No 1334/2000 setting up a Community regime for the control of exports of dual-use items and technology:

None of the ingredients is listed.

Regulation (EC) No 273/2004 on drug precursors

None of the ingredients is listed.

Regulation (EC) No 111/2005 laying down rules for the monitoring of trade between the Community and third countries in drug precursors

None of the ingredients is listed.

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer:

None of the ingredients is listed.

REGULATION (EU) 2019/1021 on persistent organic pollutants (POP)

None of the ingredients is listed.

LIST OF SUBSTANCES SUBJECT TO AUTHORISATION (ANNEX XIV)

None of the ingredients is listed.

Substances of very high concern (SVHC) according to REACH, Article 57

This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

Substances of very high concern (SVHC) according to UK REACH

This product does not contain any substances of very high concern above the legal concentration limit of $\geq 0.1\%$ (w / w).

Directive 2012/18/EU (SEVESO III):

Named dangerous substances - ANNEX I None of the ingredients is listed.

Seveso category P5c FLAMMABLE LIQUIDS

Qualifying quantity (tonnes) for the application of lower-tier requirements 5000 t

Qualifying quantity (tonnes) for the application of upper-tier requirements 50000 t

REGULATION (EC) No 1907/2006 ANNEX XVII Conditions of restriction: 3

Information about limitation of use: Not required.

National regulations

VOC-value EC: 826.4 g/l

15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

This Safety Data Sheet is in compliance with Regulation (EC) No 1907/2006, Article 31 as amended by Regulation (EU) 2020/878.

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

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- **Relevant phrases**

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

- **Abbreviations and acronyms:**

OECD: Organisation for Economic Co-operation and Development
 STOT: specific target organ toxicity
 SE: single exposure
 RE: repeated exposure
 EC50: half maximal effective concentration
 IC50: half maximal inhibitory concentration
 NOEL or NOEC: No Observed Effect Level or Concentration
 c.c.: closed cup
 ADR: Accord relatif au transport international 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
 GHS: Globally Harmonised System of Classification and Labelling of Chemicals
 EINECS: European Inventory of Existing Commercial Chemical Substances
 ELINCS: European List of Notified Chemical Substances
 CAS: Chemical Abstracts Service (division of the American Chemical Society)
 DNEL: Derived No-Effect Level (UK REACH)
 PNEC: Predicted No-Effect Concentration (UK REACH)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 PBT: Persistent, Bioaccumulative and Toxic
 SVHC: Substances of Very High Concern
 vPvB: very Persistent and very Bioaccumulative
 Flam. Liq. 2: Flammable liquids – Category 2
 Flam. Liq. 3: Flammable liquids – Category 3
 Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
 STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

- **Sources**

Data arise from safety data sheets, reference works and literature.
 ECOTOX Database
 IUCLID (International Uniform Chemical Information Database)
 RTECS (Registry of Toxic Effects of Chemical Substances)
 GESTIS- Stoffdatenbank (Substance Database, Germany)

- *** Data compared to the previous version altered.**