

Safety Data Sheet acc. to OSHA HCS (HazCom 2012)

Printing date 12/05/2023

Reviewed on 12/05/2023

1 Identification

- **Product identifier**
- **Trade name: Isothiazolinone Reagent DK5**
- **Catalogue number:**
56Z046598, 56L046530, 56U046530, 56L0465, 56L046565, 56U046565, 56L046597, 56U046597, 56L646530, SDT258
- **Application of the substance / the mixture:** Reagent for water analysis
- **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany
- **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS05 Corrosion

Corrosive to Metals 1 H290 May be corrosive to metals.



GHS07

Skin Irritation 2 H315 Causes skin irritation.
Eye Irritation 2A H319 Causes serious eye irritation.

- **Label elements**
- **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
- **Hazard pictograms**



GHS05

- **Signal word** Warning
- **Hazard-determining components of labeling:**
Lithium sulfate
phosphoric acid 10 %
sodium tungstate
- **Hazard statements**
H290 May be corrosive to metals.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
- **Precautionary statements**
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P302+P352 If on skin: Wash with plenty of soap and water.
P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.

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P390 Absorb spillage to prevent material damage.
 P321 Specific treatment (see on this label).
 P362+P364 Take off contaminated clothing and wash it before reuse.

· **Other hazards** No further relevant information available.

* 3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** Mixture of inorganic compounds.
- **Composition and Information on Ingredients:**
 Percent ranges are used due to the confidential product information.

CAS: 10377-48-7 EINECS: 233-820-4	Lithium sulfate ⚠ Acute Toxicity - Oral 4, H302	10–20%
CAS: 7664-38-2 EINECS: 231-633-2 Index number: 015-011-00-6 RTECS: TB 6300000	phosphoric acid ⚠ Corrosive to Metals 1, H290; Skin Corrosion 1B, H314; ⚠ Acute Toxicity - Oral 4, H302	5–<10%
CAS: 13472-45-2 EINECS: 236-743-4 RTECS: YO7875000	sodium tungstate ⚠ Acute Toxicity - Oral 4, H302	5–10%
CAS: 7647-01-0 EINECS: 231-595-7 Index number: 017-002-01-X RTECS: MW 9620000	hydrochloric acid ⚠ Corrosive to Metals 1, H290; Skin Corrosion 1B, H314; ⚠ Specific Target Organ Toxicity - Single Exposure 3, H335	2.5–5%

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

4 First-aid measures

- **Description of first aid measures**
- **General information:** Immediately remove any clothing soiled by the product.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**
 Immediately rinse with plenty of water.
 If skin irritation continues, consult a doctor.
- **After eye contact:** Rinse opened eye for several minutes (at least 15 min) under running water. Then consult a doctor.
- **After swallowing:**
 Rinse out mouth and then drink 1-2 glasses of water.
 If symptoms persist consult doctor.
- **Most important symptoms and effects, both acute and delayed**
 Irritation and corrosion
 after inhalation:
 mucous membrane irritation
 coughing
 breathing difficulty
 after swallowing:
 sickness
 vomiting
 diarrhoea
- **Indication of any immediate medical attention and special treatment needed:** No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture**
 The product is not combustible.
 Formation of toxic gases is possible during heating or in case of fire.
 In case of fire, the following can be released:
 Sulfur oxides (SOx)
 Hydrogen chloride (HCl)

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Phosphorus oxides (PxOx)

LiOx

Sodium oxide

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

- **Additional information**

Collect contaminated fire fighting water separately. It must not enter the sewage system.

Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.

Ambient fire may liberate hazardous vapours.

6 Accidental release measures

- **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

- **Environmental precautions:** Do not allow product to reach sewage system or any water course.

- **Methods and material for containment and cleaning up:**

Ensure adequate ventilation.

Neutralize with diluted sodium hydroxide solution or by throwing on lime sand, lime or sodium carbonate.

Absorb with liquid-binding material (sand, diatomite, universal binders).

Dispose contaminated material as waste according to section 13.

- **Reference to other sections**

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling**

- **Advice on safe handling:** No special precautions are necessary if used correctly.

- **Hygiene measures:**

Avoid contact with the skin.

Avoid contact with the eyes.

Take off immediately all contaminated clothing.

Wash hands before breaks and at the end of work.

Do not eat, drink or smoke when using this product.

- **Conditions for safe storage, including any incompatibilities**

- **Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Keep only in original container.

- **Information about storage in one common storage facility:**

Store away from metals.

Do not store together with alkalis (caustic solutions).

- **Further information about storage conditions:**

Protect from heat and direct sunlight.

Protect from exposure to the light.

Protect from humidity and water.

- **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)

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

* 8 Exposure controls/personal protection

- **Control parameters**

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

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit.

At this time, the other constituents have no known exposure limits.

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CAS: 7664-38-2 phosphoric acid	
PEL (USA)	Long-term value: 1 mg/m ³
REL (USA)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
TLV (USA)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
EL (Canada)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
EV (Canada)	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
CAS: 7647-01-0 hydrochloric acid	
PEL (USA)	Ceiling limit value: 7 mg/m ³ , 5 ppm
REL (USA)	Ceiling limit value: 7 mg/m ³ , 5 ppm
TLV (USA)	Ceiling limit value: 2 ppm A4
EL (Canada)	Ceiling limit value: 2 ppm
EV (Canada)	Ceiling limit value: 2 ppm

- **Additional information:** The lists that were valid during the creation were used as basis.
- **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment. See item 7.
- **Personal protective equipment:**
Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled.
- **Breathing equipment:** Use respiratory protective device against the effects of fume/dust/aerosol.
- **Recommended filter device for short term use:** Combination filter ABEK-P2
- **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
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 through time has to be found out by the manufacturer of the protective gloves and has to be observed.
- **Eye protection:**
Safety glasses
Use protective goggles that have been tested and approved in accordance with government standards (like NIOSH).
- **Body protection:** Protective work clothing
- **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

* 9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **Appearance:**
- **Form / Physical state:** Solution
- **Color:** Yellow
- **Odor:** Recognizable
- **Odor threshold:** Not determined.
- **pH-value at 20°C (68°F):** <1
Strongly acidic
- **Melting point/freezing point:** Not determined.
- **Initial boiling point and boiling range:** Not determined.
- **Flash point:** Not applicable.
- **Flammability (solid, gas):** The product is not combustible.
- **Auto igniting:** Not applicable.

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· Decomposition temperature:	Not determined.
· Auto-ignition temperature:	Product is not self-igniting.
· Danger of explosion:	Product does not present an explosion hazard.
· Flammability or explosive limits:	
Lower:	Not applicable.
Upper:	Not applicable.
· Oxidizing properties:	none
· Vapor Pressure:	Not determined.
· Density at 20°C (68°F):	1.2 g/cm ³ (10.01 lbs/gal)
· Relative density:	Not determined.
· Vapor density:	Not determined.
· Evaporation rate:	Not determined.
· Solubility(ies)	
· Water:	Fully miscible.
· Partition coefficient (n-octanol/water):	Not applicable (mixture).
· Viscosity:	Not determined.
· Kinematic:	Not determined.
· Other information	
· Solids content:	< 30 %
· Solvent content:	
· Organic solvents:	0 %
· Water:	> 50 %
· Information with regard to physical hazard classes .	
· Corrosive to metals	May be corrosive to metals. Information on incompatible materials can be found in Sections 7 and 10.

10 Stability and reactivity

- **Reactivity** see section "Possibility of hazardous reactions"
- **Chemical stability** Stable at ambient temperature (room temperature).
- **Possibility of hazardous reactions**
Reacts with metals forming hydrogen (Danger of explosion in case of large amounts!)
Corrosive action on metals.
Reacts with alkali (lyes).
- **Conditions to avoid** Strong heating (decomposition)
- **Incompatible materials:**
metals
alkali metals
aluminum
- **Hazardous decomposition products:** see section 5

*11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.

· Acute toxicity estimate (ATE_(mix)) - Calculation method:		
Oral	GHS ATE _(mix)	>2000—<5000 mg/kg (.)
· LD/LC50 values that are relevant for classification:		
CAS: 10377-48-7 Lithium sulfate		
Oral	LD50	613 mg/kg (rat)
CAS: 7664-38-2 phosphoric acid		
Oral	LD50	1530 mg/kg (rat) (RTECS)
Dermal	LD50	2740 mg/kg (rabbit) (RTECS)
Inhalative	LC50	>0.85 mg/l/1h (rat) (RTECS)

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CAS: 13472-45-2 sodium tungstate		
Oral	LD50	1190 mg/kg (rat) (RTECS)
Dermal	LD50.	>2000 mg/kg (rat) (OECD 402) (ECHA: limit test, there were no deaths during the study.)
CAS: 7647-01-0 hydrochloric acid		
Inhalative	LC50	3124 ppm / 1h (rat) (RTECS,V, pure)

· **Primary irritant effect:**

- **on the skin:** Causes skin irritation.
- **on the eye:** Causes serious eye irritation.

· **Information on components:**

CAS: 13472-45-2 sodium tungstate		
Irritation of skin	OECD 404	(rabbit: no irritation) (Merck)
Irritation of eyes	OECD 492	(rabbit: no irritation) (Merck)
CAS: 7647-01-0 hydrochloric acid		
Irritation of skin	OECD 404	(rabbit: burns)
Irritation of eyes	OECD 492	(rabbit: burns)

- **Sensitization:** Based on available data, the classification criteria are not met.

· **Information on components:**

CAS: 7664-38-2 phosphoric acid		
Sensitization	Patch test (human)	(negative) (IUCLID)
CAS: 13472-45-2 sodium tungstate		
Sensitization	OECD 406	(guinea pig: negative) (Merck)
CAS: 7647-01-0 hydrochloric acid		
Sensitization	OECD 406	(negative) (EPA OPP 81-6: Guinea pig maximisation test)

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**

CAS: 7647-01-0	hydrochloric acid	3
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· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

- **Other information:** see section 8 / 15

- **Synergistic Products:** None

- **CMR effects (carcinogenicity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:

- **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.
- **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 components:**

OECD 414: Teratogenicity testing
 OECD 473: Mutagenicity testing
 OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 7664-38-2 phosphoric acid		
OECD 471	(negative) (Bacterial Reverse Mutation Test - Ames test) (IUCLID)	

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CAS: 13472-45-2 sodium tungstate	
OECD 476	(negative) (In Vitro Mammalian Cell Gene Mutation Test) (Merck)
OECD 473	(negative) (Mammalian Chromosomal Aberration Test) (Chinese hamster; ovary cells)
OECD 474	(negative) (Mammalian Erythrocyte Micronucleus Test) (Meck: mouse, male, oral)

· **Additional toxicological information:**

The following applies to lithium compounds in general:
after absorption: CNS disorders, ataxia (impaired locomotor coordination) due to disturbed electrolyte balance

CAS: 7664-38-2 phosphoric acid	
. (source: GESTIS)	
Main toxic effects:	
Acute: Irritant to corrosive effect on the eyes, respiratory tract and skin, damage to the gastrointestinal tract after ingestion	
chronic: Irritant effect on the respiratory tract	

CAS: 7647-01-0 hydrochloric acid	
. (source: GESTIS)	
Main toxic effects	
Acute: Irritation and corrosion to the eyes, airways and skin, danger of severe damage to the eyes and lungs, following ingestion, concentration-dependent damage to the gastrointestinal tract	
Chronic: Airway diseases, damage to the teeth, gastrointestinal disorders	
Further Information:	
The acute action of hydrochloric acid is based on the locally damaging effects on contacted tissues which are primarily dependent on the concentration. Following repeated contact with the skin, even diluted hydrochloric acid can cause skin damage (reddening, drying, fissures, dermatitis). The critical effect following repeated inhalative exposure is irritation to the respiratory tract.	

· **Other information** Other dangerous properties can not be excluded.

12 Ecological information

· **Toxicity**

· Aquatic toxicity:	
CAS: 7664-38-2 phosphoric acid	
EC50	100 mg/l/48h (Daphnia magna) (OECD 202)
EC50	100 mg/l/72h (Desmodesmus subspicatus) (OECD 201)
LC50	138 mg/l/96h (mosquitofish)
CAS: 13472-45-2 sodium tungstate	
NOEC	>9.8 mg/l (zebrafish) (OECD 210; 38 d) (Merck)
EC50	>17.7 mg/l/72h (Pseudokirchneriella subcapitata) (OECD 201) (Merck)
CAS: 7647-01-0 hydrochloric acid	
EC50	20.5 mg/l/96h (bluegill) (OECD 203) (Merck)
· Bacterial toxicity:	
CAS: 7664-38-2 phosphoric acid	
EC50	>1000 mg/l /3h (activated sludge) (OECD 209)

· **Other information:**

The following applies for lithium compounds in general:
fish toxic from 100 mg/l, Daphnia toxic from 16 mg/l, plants toxic from 0,2 mg/l
Toxic for fish:

HCl > 25 mg/l

· **Persistence and degradability .**

· **Other information:**

Mixture of inorganic compounds.

Methods for the determination of biodegradability are not applicable to inorganic substances.

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- **Bioaccumulative potential**

Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 7664-38-2 phosphoric acid	
log Pow	-0.77 (.) (calculated)

- **Mobility in soil** No further relevant information available.

- **Other adverse effects**

Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.
Forms corrosive mixtures with water even if diluted.
Harmful effect due to pH shift.
Avoid transfer into the environment.

13 Disposal considerations

- **Waste treatment methods**

- **Recommendation:**

Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

- **Uncleaned packagings:**

- **Recommendation:** Disposal must be made according to official regulations.

- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport information

- **UN-Number**

- **DOT, IMDG, IATA**

UN3264

- **UN proper shipping name**

- **DOT**

Corrosive liquid, acidic, inorganic, n.o.s. (Hydrochloric acid, Phosphoric acid solution)

- **IMDG, IATA**

CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (HYDROCHLORIC ACID, PHOSPHORIC ACID, SOLUTION)

- **Transport hazard class(es)**

- **DOT**



- **Class**

8 Corrosive substances

- **Label**

8

- **IMDG, IATA**



- **Class**

8 Corrosive substances

- **Label**

8

- **Packing group**

- **DOT, IMDG, IATA**

III

- **Environmental hazards:**

Not applicable.

- **Special precautions for user**

Warning: Corrosive substances

- **Hazard identification number (Kemler code):**

80

- **EMS Number:**

F-A,S-B

- **Segregation groups**

(SGG1) Acids

- **Stowage Category**

A

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· Stowage Code	SW2 Clear of living quarters.
· Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code	Not applicable.
· Transport/Additional information:	
· DOT	
· Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
· IMDG	
· Limited quantities (LQ)	5L
· Excepted quantities (EQ)	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

*15 Regulatory information

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

· Section 355 (Extremely hazardous substances):

CAS: 7647-01-0 hydrochloric acid

· Section 313 (Specific toxic chemical listings):

CAS: 7664-38-2 phosphoric acid

CAS: 7647-01-0 hydrochloric acid

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

CAS: 7647-01-0 hydrochloric acid

· Proposition 65

· Chemicals known to cause cancer:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for females:

None of the ingredients is listed.

· Chemicals known to cause reproductive toxicity for males:

None of the ingredients is listed.

· Chemicals known to cause developmental toxicity:

None of the ingredients is listed.

· New Jersey Right-to-Know List:

CAS: 7664-38-2 phosphoric acid

CAS: 7647-01-0 hydrochloric acid

· New Jersey Special Hazardous Substance List:

CAS: 7664-38-2 phosphoric acid

CO

CAS: 7647-01-0 hydrochloric acid

CO, R1

· Pennsylvania Right-to-Know List:

CAS: 7664-38-2 phosphoric acid

CAS: 7647-01-0 hydrochloric acid

· Pennsylvania Special Hazardous Substance List:

CAS: 7664-38-2 phosphoric acid

E

CAS: 7647-01-0 hydrochloric acid

E

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients is listed.

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- **Information about limitation of use:** Not required.
 - **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.
-

16 Other information

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

- **Relevant phrases**

H290 May be corrosive to metals.
 H302 Harmful if swallowed.
 H314 Causes severe skin burns and eye damage.
 H335 May cause respiratory irritation.

- **Version number / date of revision:** 7 / 12/05/2023

- **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
 ACGIH[®] - American Conference of Governmental Industrial Hygienists
 •A1 - Confirmed human carcinogen
 •A2 - Suspected human carcinogen
 •A3 - Confirmed animal carcinogen with unknown relevance to humans
 •A4 - Not classifiable as a human carcinogen
 •A5 - Not suspected as a human carcinogen
 IARC - International Agency for Research on Cancer
 •Group 1 - Carcinogenic to humans
 •Group 2A - Probably carcinogenic to humans
 •Group 2B - Possibly carcinogenic to humans
 •Group 3 - Not classifiable as to carcinogenicity to humans
 •Group 4 - Probably not carcinogenic to humans
 NTP - National Toxicology Program, U.S. Department of Health and Human Services
 •Group K - Known to be Human Carcinogens
 •Group R - Reasonably Anticipated to be Human Carcinogens
 IMDG: International Maritime Code for Dangerous Goods
 DOT: US Department of Transportation
 IATA: International Air Transport Association
 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)
 LC50: Lethal concentration, 50 percent
 LD50: Lethal dose, 50 percent
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Corrosive to Metals 1: Corrosive to metals – Category 1
 Acute Toxicity - Oral 4: Acute toxicity – Category 4
 Skin Corrosion 1B: Skin corrosion/irritation – Category 1B
 Skin Irritation 2: Skin corrosion/irritation – Category 2
 Eye Irritation 2A: Serious eye damage/eye irritation – Category 2A
 Specific Target Organ Toxicity - Single Exposure 3: Specific target organ toxicity (single exposure) – Category 3

- **Sources**

Data arise from safety data sheets, reference works and literature.
 IUCLID (International Uniform Chemical Information Database)
 RTECS (Registry of Toxic Effects of Chemical Substances)
 GESTIS- Stoffdatenbank (Substance Database, Germany)
 ECHA: European CHemicals Agency <http://echa.europa.eu>

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