SAFETY DATA SHEET

This safety data sheet was created pursuant to the requirements of:
Regulation (EC) No. 1907/2006 and Regulation (EC) No. 1272/2008

Revision date 11-Jun-2021 **Previous revision date** 18-Sep-2020 **Revision Number** 1

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

1.1. Product identifier

Product Name Lyphochek Urine Metals Control, Level 2

Catalogue Number(s) 405

Pure substance/mixture Mixture

Contains Trichloroacetic acid, Phenol

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

Recommended use In vitro diagnostic

1.3. Details of the supplier of the safety data sheet

Corporate Headquarters
Bio-Rad Laboratories Inc.
1000 Alfred Nobel Drive
Hercules, CA 94547
USA

Manufacturer
Bio-Rad Laboratories Inc.
9500 Jeronimo Road
Irvine, California 92618
USA

Legal Entity / Contact Address
Bio-Rad Laboratories Ltd
The Junction
Station Road
Watford, WD17 1ET
UK

For further information, please contact
Technical Service 00800 00246 723
Techsupport.UK@bio-rad.com

1.4. Emergency telephone number

24 Hour Emergency Phone Number CHEMTREC UK: 44-870-8200418

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Regulation (EC) No 1272/2008

Acute toxicity - Oral	Category 4 - (H302)
Skin corrosion/irritation	Category 2 - (H315)
Serious eye damage/eye irritation	Category 1 - (H318)
Germ cell mutagenicity	Category 2 - (H341)
Specific target organ toxicity — single exposure	Category 3 - (H335)
Chronic aquatic toxicity	Category 2 - (H411)

2.2. Label elements

Contains Trichloroacetic acid, Phenol

Signal word
Danger

Hazard statements
H302 - Harmful if swallowed
H315 - Causes skin irritation
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H341 - Suspected of causing genetic defects
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements - EU (§28, 1272/2008)
P264 - Wash face, hands and any exposed skin thoroughly after handling
P273 - Avoid release to the environment
P280 - Wear protective gloves/protective clothing/eye protection/face protection
P310 - Immediately call a POISON CENTER or doctor
P391 - Collect spillage

2.3. Other hazards
Toxic to aquatic life. Contains components derived from human urine.

SECTION 3: Composition/information on ingredients

3.1 Substances
Not applicable

3.2 Mixtures

Chemical name	EC No	CAS No	Weight-%	Classification according to Regulation (EC) No. 1272/2008 [CLP]	REACH registration number
Trichloroacetic acid	200-927-2	76-03-9	2.5 - 5	Skin Corr. 1A (H314) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Phenol	203-632-7	108-95-2	1 - 2.5	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 3 (H331) Skin Corr. 1B (H314) Muta. 2 (H341) STOT RE 2 (H373) Aquatic Acute 2 (H401) Aquatic Chronic 2 (H411)	No data available
Sodium fluoride	231-667-8	7681-49-4	0.3 - 0.999	Acute Tox. 3 (H301) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) (EUH032)	No data available
Zinc sulfate, monohydrate	-	7446-19-7	0.01 - 0.099	Acute Tox. 4 (H302) Eye Dam. 1 (H318) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available

Arsenic acid (H3AsO4), disodium salt, heptahydrate	-	10048-95-0	0.01 - 0.099	Acute Tox. 3 (H301) Acute Tox. 3 (H331) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Carc. 1A (H350)	No data available
Selenium dioxide	231-194-7	7446-08-4	0.001 - 0.01	Acute Tox. 3 (H301) Acute Tox. 3 (H331) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Thallium(I) acetate	209-257-5	563-68-8	0.001 - 0.01	Acute Tox. 2 (H300) Acute Tox. 2 (H330) STOT RE 2 (H373) Aquatic Chronic 2 (H411)	No data available
Mercury chloride (HgCl2)	231-299-8	7487-94-7	0.001 - 0.01	Acute Tox. 2 (H300) Skin Corr. 1B (H314) Muta. 2 (H341) Repr. 2 (H361f) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Lead chloride (PbCl2)	231-845-5	7758-95-4	0.001 - 0.01	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Repr. 1A (H360Df) STOT RE 2 (H373) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Copper(2+) chloride dihydrate	-	10125-13-0	0.001 - 0.01	Acute Tox. 4 (H302) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Aluminum nitrate nonahydrate	-	7784-27-2	0.001 - 0.01	No data available	No data available
Pentachlorophenol	201-778-6	87-86-5	< 0.001	Acute Tox. 3 (H301) Acute Tox. 3 (H311) Acute Tox. 2 (H330) Skin Irrit. 2 (H315) Eye Irrit. 2 (H319) Carc. 2 (H351) STOT SE 3 (H335) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Nickel(II) sulfate hexahydrate (1:1:6)	-	10101-97-0	< 0.001	No data available	No data available
Cobalt(II) sulfate (1:1), heptahydrate	-	10026-24-1	< 0.001	No data available	No data available
Chromium(III) chloride hexahydrate	-	10060-12-5	< 0.001	No data available	No data available
Cadmium chloride	233-296-7	10108-64-2	< 0.001	Acute Tox. 3 (H301) Acute Tox. 2 (H330) Muta. 1B (H340) Carc. 1B (H350) Repr. 1B (H360FD) STOT RE 1 (H372) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)	No data available
Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer	-	28300-74-5	< 0.001	Acute Tox. 4 (H302) Acute Tox. 4 (H332) Aquatic Chronic 2 (H411)	No data available

Full text of H- and EUH-phrases: see section 16

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is required. Contains components derived from human urine.

Inhalation Remove to fresh air. Get medical attention immediately if symptoms occur. IF exposed or concerned: Get medical advice/attention.

Eye contact Get immediate medical advice/attention. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Keep eye wide open while rinsing. Do not rub affected area.

Skin contact Wash off immediately with soap and plenty of water for at least 15 minutes. Get medical attention if irritation develops and persists.

Ingestion Do NOT induce vomiting. Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Call a doctor.

Self-protection of the first aider Avoid contact with skin, eyes or clothing. Wear personal protective clothing (see section 8).

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

Symptoms Burning sensation.

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors Contains human source material and / or potentially infectious components.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media No information available.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical None known.

5.3. Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Use personal protective equipment as required. Ensure adequate ventilation. Evacuate personnel to safe areas.

Other information Refer to protective measures listed in Sections 7 and 8.

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Prevent further leakage or spillage if safe to do so.

6.3. Methods and material for containment and cleaning up

Methods for containment Do not allow into any sewer, on the ground or into any body of water.

Methods for cleaning up Clean contaminated surface thoroughly. Use:. Disinfectant.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes. Take off contaminated clothing and wash it before reuse. Ensure adequate ventilation. Avoid breathing vapours or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

General hygiene considerations Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Follow universal and standard precautions for handling potentially infectious materials.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place. Keep out of the reach of children. Store locked up. Store according to product and label instructions.

7.3. Specific end use(s)

Identified uses
Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
Trichloroacetic acid 76-03-9	-	-	TWA: 1 ppm TWA: 5 mg/m³	TWA: 1 ppm TWA: 6.8 mg/m³	TWA: 0.2 ppm TWA: 1.4 mg/m³
Phenol 108-95-2	TWA: 2 ppm TWA: 8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ *	TWA: 2 ppm TWA: 7.8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ Sk*	TWA: 2 ppm TWA: 7.8 mg/m³ STEL: 4 ppm STEL: 15.6 mg/m³ *	TWA: 2 ppm TWA: 8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ vía dérmica*	TWA: 2 ppm TWA: 8 mg/m³ H*
Sodium fluoride 7681-49-4	TWA: 2.5 mg/m³	TWA: 2.5 mg/m³	TWA: 2 mg/m³	TWA: 2.5 mg/m³	TWA: 1 mg/m³
Arsenic acid (H3AsO4), disodium salt, heptahydrate	TWA: 0.01 mg/m³	TWA: 0.1 mg/m³	-	TWA: 0.01 mg/m³	-

10048-95-0					
Selenium dioxide 7446-08-4	-	TWA: 0.1 mg/m³	-	TWA: 0.1 mg/m³	TWA: 0.05 mg/m³
Thallium(I) acetate 563-68-8	-	TWA: 0.1 mg/m³ Sk*	-	TWA: 0.1 mg/m³ vía dérmica*	-
Mercury chloride (HgCl2) 7487-94-7	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³	TWA: 0.1 mg/m³	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³
Lead chloride (PbCl2) 7758-95-4	-	TWA: 0.15 mg/m³	TWA: 0.1 mg/m³	TWA: 0.15 mg/m³	-
Copper(2+) chloride dihydrate 10125-13-0	-	-	-	TWA: 0.1 mg/m³	-
Aluminum nitrate nonahydrate 7784-27-2	-	TWA: 2 mg/m³	TWA: 2 mg/m³	TWA: 2 mg/m³	-
Pentachlorophenol 87-86-5	-	-	TWA: 0.5 mg/m³ *	TWA: 0.5 mg/m³ vía dérmica*	H*
Nickel(II) sulfate hexahydrate (1:1:6) 10101-97-0	-	TWA: 0.1 mg/m³ Sk*	-	TWA: 0.1 mg/m³	TWA: 0.03 mg/m³
Cobalt(II) sulfate (1:1), heptahydrate 10026-24-1	-	TWA: 0.1 mg/m³	-	TWA: 0.02 mg/m³	-
Chromium(III) chloride hexahydrate 10060-12-5	-	TWA: 0.5 mg/m³	-	-	TWA: 2 mg/m³
Cadmium chloride 10108-64-2	TWA: 0.001 mg/m³	TWA: 0.025 mg/m³	TWA: 0.05 mg/m³	TWA: 0.01 mg/m³ TWA: 0.002 mg/m³	-
Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5	-	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	-
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Trichloroacetic acid 76-03-9	-	TWA: 1 ppm	-	-	TWA: 1 mg/m³
Phenol 108-95-2	TWA: 2 ppm TWA: 8.0 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ pelle*	TWA: 2 ppm TWA: 8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ P*	TWA: 8 mg/m³ H*	TWA: 2 ppm TWA: 8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ iho*	TWA: 1 ppm TWA: 4 mg/m³ H*
Sodium fluoride 7681-49-4	TWA: 2.5 mg/m³	TWA: 2.5 mg/m³	-	TWA: 2.5 mg/m³	TWA: 2.5 mg/m³
Arsenic acid (H3AsO4), disodium salt, heptahydrate 10048-95-0	-	TWA: 0.01 mg/m³	TWA: 0.0028 mg/m³	TWA: 0.01 ppm	TWA: 0.01 mg/m³
Selenium dioxide 7446-08-4	-	TWA: 0.2 mg/m³	-	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³	TWA: 0.1 mg/m³
Thallium(I) acetate 563-68-8	-	TWA: 0.1 mg/m³	-	TWA: 0.1 mg/m³ iho*	TWA: 0.1 mg/m³ H*
Mercury chloride (HgCl2) 7487-94-7	TWA: 0.02 mg/m³ pelle*	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³ iho*	TWA: 0.02 mg/m³ H*
Lead chloride (PbCl2) 7758-95-4	TWA: 0.15 mg/m³	TWA: 0.05 mg/m³	TWA: 0.15 mg/m³	TWA: 0.1 mg/m³	TWA: 0.05 mg/m³
Copper(2+) chloride dihydrate 10125-13-0	-	-	TWA: 0.1 mg/m³	TWA: 0.02 mg/m³	-
Aluminum nitrate	-	TWA: 2 mg/m³	-	TWA: 2 mg/m³	TWA: 1 mg/m³

nonahydrate 7784-27-2					
Pentachlorophenol 87-86-5	-	TWA: 0.5 mg/m³ P*	-	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³ iho*	TWA: 0.005 ppm TWA: 0.05 mg/m³ H*
Nickel(II) sulfate hexahydrate (1:1:6) 10101-97-0	-	TWA: 0.1 mg/m³	-	TWA: 0.05 mg/m³ TWA: 0.01 mg/m³	TWA: 0.01 mg/m³
Cobalt(II) sulfate (1:1), heptahydrate 10026-24-1	-	TWA: 0.02 mg/m³	-	TWA: 0.02 mg/m³	TWA: 0.01 mg/m³
Chromium(III) chloride hexahydrate 10060-12-5	-	TWA: 0.5 mg/m³	TWA: 0.06 mg/m³	TWA: 0.5 mg/m³	-
Cadmium chloride 10108-64-2	-	TWA: 0.002 mg/m³	TWA: 0.004 mg/m³	TWA: 0.004 mg/m³	TWA: 0.005 mg/m³
Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5	-	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Trichloroacetic acid 76-03-9	TWA: 1 ppm TWA: 5 mg/m³	TWA: 1 ppm TWA: 7 mg/m³	STEL: 4 mg/m³ TWA: 2 mg/m³	TWA: 0.75 ppm TWA: 5 mg/m³ STEL: 2.25 ppm STEL: 10 mg/m³	TWA: 0.5 ppm STEL: 1.5 ppm
Phenol 108-95-2	TWA: 2 ppm TWA: 8 mg/m³ STEL 4 ppm STEL 16 mg/m³ H*	TWA: 5 ppm TWA: 19 mg/m³ STEL: 5 ppm STEL: 19 mg/m³ H*	STEL: 16 mg/m³ TWA: 7.8 mg/m³	TWA: 1 ppm TWA: 4 mg/m³ STEL: 3 ppm STEL: 12 mg/m³ H*	TWA: 2 ppm TWA: 8 mg/m³ STEL: 4 ppm STEL: 16 mg/m³ Sk*
Sodium fluoride 7681-49-4	-	-	TWA: 2 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 2.5 mg/m³ STEL: 7.5 mg/m³
Arsenic acid (H3AsO4), disodium salt, heptahydrate 10048-95-0	-	TWA: 0.1 mg/m³ H*	TWA: 0.01 mg/m³	TWA: 0.01 mg/m³ STEL: 0.03 mg/m³	TWA: 0.01 mg/m³ STEL: 0.03 mg/m³
Selenium dioxide 7446-08-4	TWA: 0.1 mg/m³ STEL 0.3 mg/m³	TWA: 0.02 mg/m³ STEL: 0.16 mg/m³ H*	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³
Thallium(I) acetate 563-68-8	TWA: 0.1 mg/m³ STEL 1 mg/m³	TWA: 0.1 mg/m³ H*	STEL: 0.3 mg/m³ TWA: 0.1 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³ H*	TWA: 0.02 mg/m³ STEL: 0.06 mg/m³ Sk*
Mercury chloride (HgCl2) 7487-94-7	TWA: 0.02 mg/m³ STEL 0.08 mg/m³ H*	TWA: 0.02 mg/m³ STEL: 0.16 mg/m³ H*	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³ STEL: 0.06 mg/m³	TWA: 0.02 mg/m³ STEL: 0.06 mg/m³
Lead chloride (PbCl2) 7758-95-4	TWA: 0.1 mg/m³ STEL 0.4 mg/m³	TWA: 0.1 mg/m³ STEL: 0.8 mg/m³	TWA: 0.05 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.15 mg/m³ STEL: 0.45 mg/m³
Copper(2+) chloride dihydrate 10125-13-0	TWA: 1 mg/m³ TWA: 0.1 mg/m³ STEL 4 mg/m³ STEL 0.4 mg/m³	TWA: 0.1 mg/m³ STEL: 0.2 mg/m³	TWA: 0.2 mg/m³	-	-
Aluminum nitrate nonahydrate 7784-27-2	-	TWA: 2 mg/m³	-	TWA: 2 mg/m³ STEL: 4 mg/m³	TWA: 2 mg/m³ STEL: 6 mg/m³
Pentachlorophenol 87-86-5	H*	TWA: 0.005 ppm TWA: 0.05 mg/m³ H*	STEL: 1.5 mg/m³ TWA: 0.5 mg/m³	TWA: 0.05 ppm TWA: 0.5 mg/m³ STEL: 0.15 ppm STEL: 1.5 mg/m³ H*	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³ Sk*

Nickel(II) sulfate hexahydrate (1:1:6) 10101-97-0	-	-	TWA: 0.25 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.1 mg/m³ STEL: 0.3 mg/m³
Cobalt(II) sulfate (1:1), heptahydrate 10026-24-1	H*	TWA: 0.05 mg/m³ H*	TWA: 0.02 mg/m³	TWA: 0.02 mg/m³ STEL: 0.06 mg/m³	TWA: 0.02 mg/m³ STEL: 0.3 mg/m³
Chromium(III) chloride hexahydrate 10060-12-5	-	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 2 mg/m³ STEL: 6 mg/m³
Cadmium chloride 10108-64-2	-	TWA: 0.015 mg/m³ TWA: 0.004 mg/m³ H*	TWA: 0.01 mg/m³ TWA: 0.002 mg/m³	TWA: 0.05 mg/m³ STEL: 0.15 mg/m³	TWA: 0.01 mg/m³ TWA: 0.002 mg/m³ STEL: 0.03 mg/m³ STEL: 0.006 mg/m³
Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer 28300-74-5	TWA: 0.5 mg/m³ STEL 1.5 mg/m³	-	-	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³	TWA: 0.5 mg/m³ STEL: 1.5 mg/m³

Biological occupational exposure limits

Chemical name	European Union	United Kingdom	France	Spain	Germany
Phenol 108-95-2	-	-	250 mg/g creatinine - urine (Total Phenol) - end of shift	120 mg/g Creatinine - urine () - end of shift	120 mg/g Creatinine - urine (Phenol (after hydrolysis)) - end of shift
Sodium fluoride 7681-49-4	-	-	3 mg/g creatinine - urine (Fluorides) - beginning of shift 10 mg/g creatinine - urine (Fluorides) - end of shift		7.0 mg/g Creatinine - urine (Fluoride) - end of shift 4.0 mg/g Creatinine - urine (Fluoride) - before beginning of next shift
Arsenic acid (H3AsO4), disodium salt, heptahydrate 10048-95-0	-	-	0.05 mg/g creatinine - urine (Metabolites of inorganic Arsenic) - end of workweek		
Mercury chloride (HgCl2) 7487-94-7	-	-	0.015 mg/L - blood (Total inorganic Mercury) - end of shift at end of workweek 0.050 mg/g creatinine - urine (Total inorganic Mercury) - prior to shift		25 µg/g Creatinine - urine (Mercury) - no restriction
Lead chloride (PbCl2) 7758-95-4	-	-	400 µg/L - blood (Lead) - 300 µg/L - blood (Lead) - 200 µg/L - blood (Lead) - 100 µg/L - blood (Lead) -		
Pentachlorophenol 87-86-5	-	-	5 mg/L - plasma (Free Pentachlorophenol) - end of shift	2 mg/g Creatinine - urine (total pentachlorophenol) - start of last shift of	

			2 mg/g creatinine - urine (Total Pentachlorophenol) - prior to last shift of workweek	workweek 5 mg/L - plasma (Free pentachlorophenol) - end of shift	
Cobalt(II) sulfate (1:1), heptahydrate 10026-24-1	-	-	0.015 mg/L - urine (Cobalt) - end of shift at end of workweek 0.001 mg/L - blood (Cobalt) - end of shift at end of workweek		
Chromium(III) chloride hexahydrate 10060-12-5	-	-	0.01 mg/g creatinine - urine (Total Chromium) - augmented during shift 0.03 mg/g creatinine - urine (Total Chromium) - end of shift at end of workweek		
Cadmium chloride 10108-64-2	-	-	0.005 mg/g creatinine - urine (Cadmium) - not critical 0.005 mg/L - blood (Cadmium) - not critical		
Chemical name	Italy	Portugal	Netherlands	Finland	Denmark
Phenol 108-95-2	-	-	-	1.3 mmol/L - urine (Total phenol) - after the shift	
Chemical name	Austria	Switzerland	Poland	Norway	Ireland
Phenol 108-95-2	-	250 mg/g creatinine - urine (Phenol) - end of shift	-	-	120 mg/g Creatinine - urine (Phenol) - end of shift
Sodium fluoride 7681-49-4	4 mg/g Creatinine - urine () - before following shift 7 mg/g Creatinine - urine () - immediately after exposure or end of the shift		-	-	2 mg/L - urine (Fluoride) - prior to shift 3 mg/L - urine (Fluoride) - end of shift
Arsenic acid (H3AsO4), disodium salt, heptahydrate 10048-95-0	3.2 million/µL Erythrocytes - red and white blood count () - not provided 3.8 million/µL Erythrocytes - red and white blood count () - not provided 4000 Leukocytes/µL - red and white blood count () - not provided 13000		-	-	-

	Leukocytes/µL - red and white blood count () - not provided 10 g/dL Hemoglobin - red and white blood count () - not provided 12 g/dL Hemoglobin - red and white blood count () - not provided 30 % Hematocrit - red and white blood count () - not provided 35 % Hematocrit - red and white blood count () - not provided 50 µg/L - urine () - after end of work day, at the end of a work week/end of the shift				
Mercury chloride (HgCl2) 7487-94-7	25 µg/g Creatinine - urine () - after end of work day, at the end of a work week/end of the shift		-	-	-
Lead chloride (PbCl2) 7758-95-4	120 µg/100 mL RBC Erythropoietic protoporphyria - blood (Ethylenediaminetetraacetic acid) - not provided 30 µg/100 mL blood Lead - blood (Ethylenediaminetetraacetic acid) - not provided 3.8 million/µL Erythrocytes - blood (Ethylenediaminetetraacetic acid) - not provided 12 g/dL Hemoglobin - blood (Ethylenediaminetetraacetic acid) - not provided 35 % Hematocrit - blood (Ethylenediaminetetraacetic acid) - not provided 10 mg/L - urine (.delta.-Aminolevulinic acid) - not provided 3.2 million/µL		-	-	-

	Erythrocytes - blood (Ethylenediaminetetraacetic acid) - not provided 10 g/dL Hemoglobin - blood (Ethylenediaminetetraacetic acid) - not provided 30 % Hematocrit - blood (Ethylenediaminetetraacetic acid) - not provided 6 mg/L - urine (.delta.-Aminolevulinic acid) - not provided				
Pentachlorophenol 87-86-5	-		-	-	2 mg/g Creatinine - urine (total Pentachlorophenol) - prior to last shift of workweek 5 mg/L - plasma (free Pentachlorophenol) - prior to last shift of workweek
Nickel(II) sulfate hexahydrate (1:1:6) 10101-97-0	7 µg/L - urine (spontaneous urine) - after end of work day, at the end of a work week/end of the shift - () -		-	-	3 µg/L - urine (Nickel) - after several consecutive working shifts
Cobalt(II) sulfate (1:1), heptahydrate 10026-24-1	10 µg/L - urine (spontaneous urine) - after end of work day, at the end of a work week/end of the shift - () -		-	-	-
Cadmium chloride 10108-64-2	2.5 µg/g Creatinine - urine (N-Acetylglucosaminidase) - not provided - () -		-	-	2 µg/g Creatinine - urine (Cadmium) - not critical

Derived No Effect Level (DNEL) No information available.

Predicted No Effect Concentration (PNEC) No information available.

8.2. Exposure controls

Personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Hand protection Wear suitable gloves. Impervious gloves.

Skin and body protection	Wear suitable protective clothing.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Avoid contact with skin, eyes or clothing. Wear suitable gloves and eye/face protection. Do not eat, drink or smoke when using this product. Wash hands before breaks and immediately after handling the product. Follow universal and standard precautions for handling potentially infectious materials.
Environmental exposure controls	No information available.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Solid
Appearance	powder or cake, lyophilised
Colour	yellow
Odour	Slight.
Odour threshold	No information available

Property	**Values**	**Remarks • Method**
pH	4.9-5.1	
pH (as aqueous solution)		
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapour pressure	No data available	None known
Vapour density	No data available	None known
Relative density	No data available	None known
Water solubility	Soluble in water	
Solubility(ies)	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive properties	Not applicable	
Oxidising properties	Not applicable	

9.2. Other information

Softening point	Not applicable
Molecular weight	Not applicable
VOC Content (%)	Not applicable

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity No information available.

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data
Sensitivity to mechanical impact None.
Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid None known based on information supplied.

10.5. Incompatible materials

Incompatible materials Strong acids. Strong bases. Strong oxidising agents.

10.6. Hazardous decomposition products

Hazardous decomposition products None known based on information supplied.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information

Inhalation Specific test data for the substance or mixture is not available. May cause irritation of respiratory tract.

Eye contact Specific test data for the substance or mixture is not available. Causes serious eye damage. May cause irreversible damage to eyes. (based on components).

Skin contact Specific test data for the substance or mixture is not available. Causes skin irritation. (based on components).

Ingestion Specific test data for the substance or mixture is not available. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea. Harmful if swallowed. (based on components).

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Redness. Burning. May cause blindness. May cause redness and tearing of the eyes.

Numerical measures of toxicity

Acute toxicity

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)	1,511.20 mg/kg
ATEmix (dermal)	8,669.70 mg/kg
ATEmix (inhalation-dust/mist)	11.90 mg/l

Unknown acute toxicity

67.999 % of the mixture consists of ingredient(s) of unknown acute oral toxicity.

Product Information

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Trichloroacetic acid	= 3320 mg/kg (Rat)	> 2000 mg/kg (Rat)	
Phenol	= 340 mg/kg (Rat) = 317 mg/kg (Rat)	= 630 mg/kg (Rabbit)	= 316 mg/m³ (Rat) 4 h
Sodium fluoride	= 52 mg/kg (Rat)	= 175 mg/kg (Rat)	
Selenium dioxide	= 48 mg/kg (Rat) = 68.1 mg/kg (Rat)	= 4 mg/kg (Rabbit)	
Thallium(I) acetate	= 41.3 mg/kg (Rat)		
Mercury chloride (HgCl2)	= 1 mg/kg (Rat)	= 41 mg/kg (Rabbit) = 41 mg/kg (Rat)	
Lead chloride (PbCl2)	> 1947 mg/kg (Rat)		
Pentachlorophenol	= 27 mg/kg (Rat)	= 40 mg/kg (Rabbit) = 26 mg/kg (Rat)	
Nickel(II) sulfate hexahydrate (1:1:6)	= 264 mg/kg (Rat)		
Cobalt(II) sulfate (1:1), heptahydrate	= 582 mg/kg (Rat)		
Chromium(III) chloride hexahydrate	= 1790 mg/kg (Rat)		
Cadmium chloride	= 88 mg/kg (Rat)		
Antimonate(2-), bis[.mu.-(2,3-dihydroxybutanedioato(4-)-O1,O2:O3,O4)]di-, dipotassium, trihydrate, stereoisomer	= 115 mg/kg (Rat)		

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Classification based on data available for ingredients. Irritating to skin.

Product Information

Serious eye damage/eye irritation Classification based on data available for ingredients. Causes burns. Risk of serious damage to eyes.

Product Information

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

Product Information

Germ cell mutagenicity Contains a known or suspected mutagen. Classification based on data available for ingredients. Suspected of causing genetic defects.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as mutagenic.

Product Information

Chemical name	European Union
Phenol	Muta. 2
Mercury chloride (HgCl2)	Muta. 2
Cadmium chloride	Muta. 1B

Carcinogenicity Based on available data, the classification criteria are not met.

The table below indicates whether each agency has listed any ingredient as a carcinogen.

Product Information	
Chemical name	European Union
Arsenic acid (H3AsO4), disodium salt, heptahydrate	Carc. 1A
Pentachlorophenol	Carc. 2
Cadmium chloride	Carc. 1B

Reproductive toxicity Based on available data, the classification criteria are not met.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	European Union
Mercury chloride (HgCl2)	Repr. 2
Lead chloride (PbCl2)	Repr. 1A
Cadmium chloride	Repr. 1B

Product Information

STOT - single exposure May cause respiratory irritation.

Product Information

STOT - repeated exposure Based on available data, the classification criteria are not met.

Product Information

Aspiration hazard Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Unknown aquatic toxicity Contains 0 % of components with unknown hazards to the aquatic environment.

Product Information				
Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
Phenol	EC50: 0.0188 - 0.1044mg/L (96h, Pseudokirchneriella subcapitata) EC50: 187 - 279mg/L (72h, Desmodesmus subspicatus) EC50: =46.42mg/L (96h, Pseudokirchneriella subcapitata)	LC50: 11.9 - 25.3mg/L (96h, Lepomis macrochirus) LC50: 11.9 - 50.5mg/L (96h, Pimephales promelas) LC50: 20.5 - 25.6mg/L (96h, Pimephales promelas) LC50: 23.4 - 36.6mg/L (96h, Oryzias latipes) LC50: 33.9 - 43.3mg/L (96h, Oryzias latipes) LC50: 34.09 - 47.64mg/L (96h, Poecilia reticulata) LC50: 4.23 - 7.49mg/L (96h, Oncorhynchus mykiss) LC50: 5.0 - 12.0mg/L (96h, Oncorhynchus mykiss) LC50: 5.449 - 6.789mg/L (96h, Oncorhynchus mykiss)	-	EC50: 10.2 - 15.5mg/L (48h, Daphnia magna) EC50: 4.24 - 10.7mg/L (48h, Daphnia magna)

		LC50: 7.5 - 14mg/L (96h, Oncorhynchus mykiss) LC50: =0.00175mg/L (96h, Cyprinus carpio) LC50: =11.5mg/L (96h, Lepomis macrochirus) LC50: =13.5mg/L (96h, Lepomis macrochirus) LC50: =27.8mg/L (96h, Brachydanio rerio) LC50: =31mg/L (96h, Poecilia reticulata) LC50: =32mg/L (96h, Pimephales promelas)		
Sodium fluoride	EC50: =272mg/L (96h, Pseudokirchneriella subcapitata) EC50: =850mg/L (72h, Desmodesmus subspicatus)	LC50: 38 - 68mg/L (96h, Oncorhynchus mykiss) LC50: =180mg/L (96h, Pimephales promelas) LC50: =830mg/L (96h, Lepomis macrochirus) LC50: >530mg/L (96h, Lepomis macrochirus)	-	EC50: =338mg/L (48h, Daphnia magna) EC50: =98mg/L (48h, Daphnia magna)
Mercury chloride (HgCl2)	-	LC50: 0.014 - 0.019mg/L (96h, Oncorhynchus mykiss) LC50: 0.02 - 0.26mg/L (96h, Cyprinus carpio) LC50: 0.096 - 0.133mg/L (96h, Lepomis macrochirus) LC50: 0.1 - 0.182mg/L (96h, Pimephales promelas) LC50: 0.13 - 0.19mg/L (96h, Oncorhynchus mykiss) LC50: 5.933 - 10.34mg/L (96h, Poecilia reticulata) LC50: =0.041mg/L (96h, Poecilia reticulata) LC50: =0.155mg/L (96h, Pimephales promelas) LC50: =0.4mg/L (96h, Lepomis macrochirus) LC50: =4.425mg/L (96h, Cyprinus carpio)	-	EC50: =0.0015mg/L (48h, Daphnia magna) EC50: >0.012mg/L (48h, Daphnia magna)
Pentachlorophenol	EC50: 0.005 - 0.3mg/L (96h, Pseudokirchneriella subcapitata) EC50: =0.1mg/L (72h, Pseudokirchneriella subcapitata) EC50: =0.183mg/L (72h, Desmodesmus subspicatus)	LC50: 0.031 - 0.038mg/L (96h, Oncorhynchus mykiss) LC50: 0.079 - 0.187mg/L (96h, Pimephales promelas) LC50: 0.102 - 0.128mg/L (96h, Oncorhynchus mykiss) LC50: 0.103 - 0.129mg/L (96h, Lepomis macrochirus) LC50: 0.11 - 0.49mg/L (96h, Pimephales promelas) LC50: 0.170 - 0.3mg/L	-	EC50: 0.138 - 0.307mg/L (48h, Daphnia magna)

		(96h, Oryzias latipes) LC50: =0.36mg/L (96h, Poecilia reticulata)		
Cadmium chloride	EC50: =3.7mg/L (96h, Chlorella vulgaris)	LC50: =0.0409mg/L (96h, Pimephales promelas)	-	EC50: 0.012 - 0.054mg/L (48h, Daphnia magna)

12.2. Persistence and degradability

Persistence and degradability No information available.

12.3. Bioaccumulative potential

Bioaccumulation There is no data for this product.

Component Information

Chemical name	Partition coefficient
Phenol	1.5
Pentachlorophenol	5.01

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment

Chemical name	PBT and vPvB assessment
Trichloroacetic acid	The substance is not PBT / vPvB
Phenol	The substance is not PBT / vPvB
Sodium fluoride	The substance is not PBT / vPvB PBT assessment does not apply
Zinc sulfate, monohydrate	The substance is not PBT / vPvB
Selenium dioxide	PBT assessment does not apply
Lead chloride (PbCl2)	PBT assessment does not apply
Copper(2+) chloride dihydrate	The substance is not PBT / vPvB
Aluminum nitrate nonahydrate	PBT assessment does not apply
Chromium(III) chloride hexahydrate	The substance is not PBT / vPvB PBT assessment does not apply
Cadmium chloride	PBT assessment does not apply

12.6. Other adverse effects

Other adverse effects No information available.

Chemical name	EU - Endocrine Disrupters Candidate List	EU - Endocrine Disrupters - Evaluated Substances
Pentachlorophenol	Group III Chemical	-

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information

IMDG

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Marine pollutant	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None
14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code	No information available

RID

14.1 UN number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None

IATA

14.1 UN number or ID number	1759
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	III
14.5 Environmental hazards	Not applicable
14.6 Special Precautions for Users	
Special Provisions	None

SECTION 15: Regulatory information

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

National regulations

France

Occupational Illnesses (R-463-3, France)

Chemical name	French RG number	Title
Phenol 108-95-2	RG 14	-
Sodium fluoride 7681-49-4	RG 32	-
Selenium dioxide 7446-08-4	RG 75	-
Mercury chloride (HgCl2) 7487-94-7	RG 2	-
Lead chloride (PbCl2) 7758-95-4	RG 1	-

Pentachlorophenol 87-86-5	RG 14	-
Cadmium chloride 10108-64-2	RG 61	-

Germany

Water hazard class (WGK) slightly hazardous to water (WGK 1)

European Union

Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work

Authorisations and/or restrictions on use:

This product contains one or more substance(s) subject to restriction (Regulation (EC) No. 1907/2006 (REACH), Annex XVII)

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
Pentachlorophenol - 87-86-5	22.	
Cadmium chloride - 10108-64-2	72. 28. 29. 30.	

Persistent Organic Pollutants

Not applicable

Export Notification requirements

This product contains substances which are regulated pursuant to Regulation (EC) No. 649/2012 of the European parliament and of the council concerning the export and import of dangerous chemicals

Chemical name	European Export/Import Restrictions per (EC) 689/2008 - Annex Number
Pentachlorophenol - 87-86-5	I.1 I.3

Dangerous substance category per Seveso Directive (2012/18/EU)

E2 - Hazardous to the Aquatic Environment in Category Chronic 2

Ozone-depleting substances (ODS) regulation (EC) 1005/2009 Not applicable

International Inventories

Contact supplier for inventory compliance status

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

EUH032 - Contact with acids liberates very toxic gas
H300 - Fatal if swallowed
H301 - Toxic if swallowed
H302 - Harmful if swallowed
H311 - Toxic in contact with skin
H314 - Causes severe skin burns and eye damage

H315 - Causes skin irritation
H318 - Causes serious eye damage
H319 - Causes serious eye irritation
H330 - Fatal if inhaled
H331 - Toxic if inhaled
H332 - Harmful if inhaled
H335 - May cause respiratory irritation
H340 - May cause genetic defects
H341 - Suspected of causing genetic defects
H350 - May cause cancer
H351 - Suspected of causing cancer
H360Df - May damage the unborn child. Suspected of damaging fertility
H360FD - May damage fertility. May damage the unborn child
H361f - Suspected of damaging fertility
H372 - Causes damage to organs through prolonged or repeated exposure
H373 - May cause damage to organs through prolonged or repeated exposure
H400 - Very toxic to aquatic life
H401 - Toxic to aquatic life
H410 - Very toxic to aquatic life with long lasting effects
H411 - Toxic to aquatic life with long lasting effects

Legend
SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Classification procedure	
Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - Vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Carcinogenicity	Calculation method
Reproductive toxicity	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS
Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
EPA (Environmental Protection Agency)
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
Japan GHS Classification
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
RTECS (Registry of Toxic Effects of Chemical Substances)
World Health Organization

Prepared By	Bio-Rad Laboratories, Environmental Health and Safety
Revision date	11-Jun-2021
Reason for revision	Significant changes throughout SDS. Review all sections

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006

Disclaimer
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End of Safety Data Sheet