

Safety Data Sheet

acc. to OSHA HCS

Printing date 05/10/2023

Reviewed on 05/10/2023

1 Identification

- **Product identifier**
- **Trade name:** Bradford reagent, 5X
- **Article number:** 39222
- **Application of the substance / the mixture:** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**
SERVA Electrophoresis GmbH
Carl-Benz-Str. 7
D-69115 Heidelberg
Tel.: +49 6221 13840-0
FAX: +49 6221 13840-10
msds.info@serva.de
- **Information department:** Product Safety department Tel.: +49 6221 13840-35
- **Emergency telephone number:**
Medical Emergency Information in case of poisoning:
Poison Information Center Mainz - Phone: +49 (0) 6131 19240
(advisory service in German or English language)



2 Hazard(s) identification

- **Classification of the substance or mixture**



GHS02

Flammable Liquids 3 H226 Flammable liquid and vapor.



GHS05

Skin Corrosion 1B H314 Causes severe skin burns and eye damage.

- **Label elements**
- **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:** GHS02, GHS05
- **Signal word:** Danger
- **Hazard-determining components of labeling:**
phosphoric acid 85 %
- **Hazard statements:**
Flammable liquid and vapor.
Causes severe skin burns and eye damage.
- **Precautionary statements**
Do not breathe mist/vapours/spray.
Wear protective gloves/protective clothing/eye protection/face protection.
If swallowed: Rinse mouth. Do NOT induce vomiting.
If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.

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- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

- **HMIS-ratings (scale 0 - 4)**



Health = 3
Fire = 0
Reactivity = 0

- **Other hazards**
- **Results of PBT and vPvB assessment:**
- **PBT:** PBT - assessment not available.
- **vPvB:** vPvB - assessment not available.

3 Composition/information on ingredients

- **Chemical characterization: Mixtures**
- **Description:** aqueous solution

· Empirical formula:

7732-18-5	water, distilled, conductivity or of similar purity	H_2O
64-17-5	ethanol	C_2H_6O
6104-58-1	Acid Blue 90 (C.I. 42655)	$C_{47}H_{48}N_3O_7S_2Na$

· Dangerous components:

7664-38-2	phosphoric acid 85 %	40-70%
64-17-5	ethanol	15-30%

· Additional information:

the product contains no further substances which shall be indicated according to REACH-Regulation (Regulation (EC) No. 1907/2006).

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 wash with water and soap and rinse thoroughly. Consult doctor if you feel unwell.
- **After eye contact:**
Rinse opened eye for several minutes under running water. Remove present contact lenses, if easy to do, and continue rinsing. Consult ophthalmologist immediately.
- **After swallowing:**
Wash out mouth instantly. Drink copious amounts of water and provide fresh air. Call for doctor immediately.
- **Most important symptoms and effects, both acute and delayed** No further relevant information available.
- **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

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5 Fire-fighting measures

- **Extinguishing media**
- **Suitable extinguishing agents:**
CO₂ extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture**
Vapours can form flammable and explosive mixtures with air.
Formation of dangerous gases or vapours is possible in case of fire.
- **Advice for firefighters**
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**
Wear protective clothing.
Ensure adequate ventilation.
Do not inhale vapours.
- **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
- **Methods and material for containment and cleaning up**
Dispose contaminated material as waste according to item 13.
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **Protective Action Criteria for Chemicals**

· PAC-1:

7664-38-2	phosphoric acid 85 %	3 mg/m ³
64-17-5	ethanol	1,800 ppm

· PAC-2:

7664-38-2	phosphoric acid 85 %	30 mg/m ³
64-17-5	ethanol	3300* ppm

· PAC-3:

7664-38-2	phosphoric acid 85 %	150 mg/m ³
64-17-5	ethanol	15000* ppm

- **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

- **Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace.
- **Information about protection against explosions and fires:** Keep ignition sources away - Do not smoke.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** Store at +2 to +8 °C
- **Information about storage in one common storage facility:** Do not store together with oxidizing materials.
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **Specific end use(s):** No further relevant information available.

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8 Exposure controls/personal protection

· Control parameters

· Components with limit values that require monitoring at the workplace:

7664-38-2 phosphoric acid 85 % (40-70%)

PEL	Long-term value: 1 mg/m ³
REL	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³
TLV	Short-term value: 3 mg/m ³ Long-term value: 1 mg/m ³

64-17-5 ethanol (15-30%)

PEL	Long-term value: 1900 mg/m ³ , 1000 ppm
REL	Long-term value: 1900 mg/m ³ , 1000 ppm
TLV	Short-term value: 1000 ppm
A3	

· Additional information: The lists that were valid during the creation were used as basis.

· Exposure controls

· Additional information about design of technical systems: No further data; see item 7.

· Personal protective equipment:

· General protective and hygienic measures:

Keep away from foodstuffs, beverages and feed.

Store protective clothing separately.

Immediately remove all soiled and contaminated clothing.

Avoid contact with the eyes and skin.

Wash hands before breaks and at the end of work.

· Breathing equipment:

Short term filter device:

Filter P2

· Protection of hands:

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Protective gloves

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· Material of gloves:

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· Penetration time of glove material:

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

· For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:

Neoprene gloves

· Eye protection: Tightly sealed goggles

· Body protection: Protective work clothing

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9 Physical and chemical properties

- **Information on basic physical and chemical properties**
- **General Information:**
- **Color:** red to brown
- **Odor:** Characteristic
- **Odor threshold:** Not determined.
- **Melting point/Melting range:** no information available
- **Boiling point/Boiling range:** no information available
- **Flammability (solid, gaseous):** no information available
- **Explosion limits:**
- **Lower:** no information available
- **Upper:** no information available
- **Flash point:** no information available
- **Decomposition temperature:** no information available
- **Viscosity:**
- **Kinematic viscosity:** no information available
- **Dynamic viscosity:** no information available
- **Solubility in / Miscibility with:**
- **Water:** Fully miscible.
- **Partition coefficient (n-octanol/water):** no information available
- **Vapor pressure:** no information available
- **Density:** no information available
- **Relative density:** no information available
- **Other information** There are no more data available.
- **Appearance:**
- **Form:** Solution
- **Important information on protection of health and environment, and on safety:**
- **Danger of explosion:** Not determined.
- **VOC %:**
- **VOC content:** 0.00 %

10 Stability and reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:**
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions:** No further relevant information available.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** In case of fire: See Section 5

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **on the skin:** Causes severe skin burns and eye damage.
- **Additional toxicological information:**
- **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)

64-17-5	ethanol
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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.

* **12 Ecological information**· **Toxicity:**· **Aquatic toxicity:** No further relevant information available.· **Persistence and degradability:** No further relevant information available.· **Bioaccumulative potential:** No further relevant information available.· **Mobility in soil:** No further relevant information available.· **Results of PBT and vPvB assessment:**· **PBT:** Not applicable.· **vPvB:** Not applicable.· **Other adverse effects:**· **Additional ecological information:**· **General notes:**

Do not allow product to reach ground water, water course or sewage system.

Water hazard class 1 (Self-assessment): slightly hazardous for water

* **13 Disposal considerations**· **Waste treatment methods**· **Recommendation:**

Disposal must be made according to official regulations.

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

· **Uncleaned packagings:**· **Recommendation:**

Disposal of uncleaned packagings must be made according to official regulations in the same manner as the product.

· **Recommended cleansing agent:** Water, if necessary with cleansing agents.* **14 Transport information**· **UN-Number**· **DOT, ADR, IMDG, IATA**

UN2924

· **UN proper shipping name**· **DOT**

Flammable liquids, corrosive, n.o.s. (Ethanol, Phosphoric acid solution)

· **ADR**

2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), PHOSPHORIC ACID, SOLUTION)

· **IMDG**

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), PHOSPHORIC ACID, SOLUTION)

· **IATA**

FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL, PHOSPHORIC ACID, SOLUTION)

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· **Transport hazard class(es)**· **DOT**· **Class**

3 Flammable liquids

· **Label**

3, 8

· **ADR**· **Class:**

3 Flammable liquids

· **Label:**

3+8

· **IMDG**· **Class**

3 Flammable liquids

· **Label**

3/8

· **IATA**· **Class**

3 Flammable liquids

· **Label**

3 (8)

· **Packing group**· **DOT, ADR, IMDG, IATA**

III

· **Environmental hazards**· **Marine pollutant:**

No

· **Special precautions for user**

Warning: Flammable liquids

· **Hazard identification number (Kemler code):** 38· **EMS Number:**

F-E,S-C

· **Segregation groups**

(SGG1) Acids

· **Stowage Category**

B

· **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:**· **ADR**· **Excepted quantities (EQ)**

Code: E1

Maximum net quantity per inner packaging: 30 ml

Maximum net quantity per outer packaging: 1000 ml

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· 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
· UN "Model Regulation":	UN 2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (ETHANOL (ETHYL ALCOHOL), PHOSPHORIC ACID, SOLUTION), 3 (8), III

15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· Section 355 (extremely hazardous substances):

None of the ingredients is listed.

· Section 313 (Specific toxic chemical listings):

7664-38-2 phosphoric acid 85 %

· TSCA (Toxic Substances Control Act):

All components have the value ACTIVE.

· Hazardous Air Pollutants

None of the ingredients is listed.

· Proposition 65

None of the ingredients is listed.

· 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:

64-17-5 ethanol

· Cancerogenity categories

· EPA (Environmental Protection Agency)

None of the ingredients is listed.

· TLV (Threshold Limit Value)

64-17-5 ethanol

A3

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

None of the ingredients is listed.

· GHS label elements

The product is classified and labeled according to the Globally Harmonized System (GHS).

· Hazard pictograms GHS02, GHS05

· Signal word Danger

· Hazard-determining components of labeling:

phosphoric acid 85 %

· Hazard statements

Flammable liquid and vapor.

Causes severe skin burns and eye damage.

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- **Precautionary statements**

Do not breathe mist/vapours/spray.

Wear protective gloves/protective clothing/eye protection/face protection.

If swallowed: Rinse mouth. Do NOT induce vomiting.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

- **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.

- **Department issuing SDS:** Product safety department

- **Contact:** +49 6221 13840-35

- **Date of preparation / last revision** 05/10/2023

- **Abbreviations and acronyms:**

RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)

ICAO: International Civil Aviation Organisation

PBT: persistent, bioaccumulative, toxic substance (REACH)

vPvB: very persistent, very bioaccumulative substance (REACH)

REACH: Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

CLP: Regulation on classification, labelling and packaging of substances and mixtures

bw: body weight

ADR: Accord relatif au transport international des marchandises dangereuses par route (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

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)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

PBT: Persistent, Bioaccumulative and Toxic

vPvB: very Persistent and very Bioaccumulative

NIOSH: National Institute for Occupational Safety

OSHA: Occupational Safety & Health

TLV: Threshold Limit Value

PEL: Permissible Exposure Limit

REL: Recommended Exposure Limit

Flammable Liquids 3: Flammable liquids – Category 3

Skin Corrosion 1B: Skin corrosion/irritation – Category 1B