Safety data sheet
according to UK REACH

Printing date 16.09.2026 Version 3.1 Revision: 16.09.2026

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

· **1.1 Product identifier**

· **Trade name: RA-4 BX-VR**

· **Article number:**
12660
12666
12662
12665

· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
To this day we do not have any information about the identified use at the moment. These data are available we will add these to the safety data sheet.

· **Application of the substance / the mixture**
Photographic activities
Photo chemicals
Bleach fixative bath

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Calbe Chemie GmbH
Stadtfeld 31
D-39240 Calbe
Phone: +49 (0)39291 425-0
Fax: +49 (0)39291 425-25
e-mail: info@calbe-chemie.de
www.calbe-chemie.de

· **Informing department:** E-Mail: info@calbe-chemie.de
· **1.4 Emergency telephone number:**
Phone: +49 (0) 700-24112112 (CAL)
Phone: +1 872 5888271(CAL)

SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**

GHS07

Skin Irrit. 2 H315 Causes skin irritation.
Eye Irrit. 2 H319 Causes serious eye irritation.
· **Additional information:**
The full text of the classification and labelling elements mentioned is given in Section 16.

· **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**

GHS07

· **Signal word** Warning
· **Hazard statements**
H315 Causes skin irritation.
H319 Causes serious eye irritation.

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· **Precautionary statements**

P264	Wash thoroughly after handling.
P280	Wear protective gloves / eye protection / face protection.
P302+P352	IF ON SKIN: Wash with plenty of 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.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

· **Additional information:**
EUH031 Contact with acids liberates toxic gas.

· **2.3 Other hazards**
No special hazards known if the regulations/instructions for storage and handling are observed.
Where applicable, this section provides information on other hazards that do not result in classification but may contribute to the overall hazards of the substance or mixture.
The product does not contain any substance above legal limits that fulfils the criteria for PBT (persistent, bioaccumulative and toxic) or vPvB (very persistent and very bioaccumulative). The product does not contain any substance above the legal limits that has been included in the list drawn up in accordance with Article 59(1) of Regulation (EC) No 1907/2006 due to endocrine disrupting properties or that has endocrine disrupting or endocrine disrupting properties in accordance with Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable

SECTION 3: Composition/information on ingredients

· **3.2 Mixtures**
· **Description:** Mixture of the substances listed below with harmless additions.

· **Dangerous components:**

CAS: 7783-18-8 EINECS: 231-982-0 REACH Reg. no.: 01-2119537325-41-xxxx	ammonium thiosulphate Acute Tox. 4, H302	25 - 50%
CAS: 10192-30-0 EINECS: 233-469-7 REACH Reg. no.: 01-2119537321-49-xxxx	ammonium hydrogensulphite Eye Irrit. 2, H319	≥ 5 - < 10%
CAS: 1336-21-6 EINECS: 215-647-6 Index number: 007-001-01-2 REACH Reg. no.: 01-2119982985-14-xxxx	ammonia Skin Corr. 1B, H314; Eye Dam. 1, H318 Aquatic Acute 1, H400	≥ 2.5 - < 3%
CAS: 7664-38-2 EINECS: 231-633-2 Index number: 015-011-00-6 REACH Reg. no.: 01-2119485924-24-xxxx	phosphoric acid . %, orthophosphoric acid . % Met. Corr.1, H290; Skin Corr. 1B, H314	0.5 - 2%

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

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SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **General information**
Instantly remove any clothing soiled by the product.
Personal protection for the First Aider.

· **After inhalation** Supply fresh air.

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

· **After eye contact**
Rinse opened eye for several minutes under running water (> 15 min). Then consult doctor.
Rinse opened eye for several minutes under running water (at least 15 minutes).
Remove contact lenses, if present and easy to do.
Protect uninjured eye.
Call a doctor immediately.

· **After swallowing** Rinse out mouth and then drink plenty of water.
· **4.2 Most important symptoms and effects, both acute and delayed**
To date, there are no known symptoms.
· **4.3 Indication of any immediate medical attention and special treatment needed**
Basic relief, decontamination, symptomatic treatment.

SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents** Use fire fighting measures that suit the environment.

· **For safety reasons unsuitable extinguishing agents**
No strong water jet (to avoid material dispersion).
· **5.2 Special hazards arising from the substance or mixture**
Can be released in case of fire
sulphur dioxide (SO2)
Nitrogen oxides (NOx)
· **5.3 Advice for firefighters**

· **Protective equipment:**
If toxic gases occur:
Do not inhale explosion gases or combustion gases.

SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Not required
· **6.2 Environmental precautions:**
Do not allow product to reach sewage system or water bodies.
Inform respective authorities in case product reaches water or sewage system.
· **6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose of contaminated material as waste according to item 13.
· **6.4 Reference to other sections**
No dangerous materials are released.
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.

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See Section 13 for information on disposal.

SECTION 7: Handling and storage

· **7.1 Precautions for safe handling**
· **Information about protection against explosions and fires:**
No special measures required.
Compliance with the general rules of preventive workplace fire safety.

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and containers:** No special requirements.
· **Information about storage in one common storage facility:**
Keep away from foodstuffs, beverages and food.
· **Further information about storage conditions:**
Keep container tightly sealed.
Store in a cool place.
· **Recommended storage temperature:** 5-25°C
· **Storage class**
(German Technical Rule for Hazardous Substance – TRGS 510)
12
· **7.3 Specific end use(s)** No further relevant information available.

SECTION 8: Exposure controls/personal protection

· **8.1 Control parameters**
· **Additional information about design of technical systems:** No further data; see section 7.
· **Components with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.

7664-38-2 phosphoric acid . %, orthophosphoric acid . %	
WEL	Short-term value: 2 mg/m³ Long-term value: 1 mg/m³

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

· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures**
Wash contaminated clothing before reuse.
The usual precautionary measures should be adhered to general rules for handling chemicals.
Keep away from foodstuffs, beverages and food.
Take off immediately all contaminated clothing.
Wash hands during breaks and at the end of the work.
Avoid contact with the eyes and skin.
Do not eat, drink or smoke while working.

· **Breathing equipment:** Not required

· **Protection of hands:**
Protective gloves.
The protective gloves to be used must comply with the specifications of the (EU) 2016/425 and the resultant standard EN 374.
This recommendation applies only to the product stated in the Safety Data Sheet and supplied by us as well as to the purpose specified by us.
Only use chemical-protective gloves with CE-labelling of category III.

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

· **Material of gloves**

	Thickness (mm)	Breakthrough time (min)
Nitril rubber	0,38	> 480
Neoprene	0,65	> 240
Butyl rubber	0,36	> 480

Avoid natural rubber 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. 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**

Value for permeation: Level ≥ 6 (480 min)

The determined penetration times according to EN 16523-1:2015 are not performed under practical conditions. Therefore a maximum wearing time, which corresponds to 50% of the penetration time, is recommended.

· **As protection from splashes gloves made of the following materials are suitable:**

Synthetic gloves

Value for the permeation: Level:

≥ 3 (60 min)

· **Eye protection:** Safety glasses

· **Body protection:** Protective work clothing.

SECTION 9: Physical and chemical properties

· **9.1 Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Colour:	Dark brown
· **Odour:**	Weak, characteristic
· **Odour threshold:**	Not determined
· **pH-value at 20 °C:**	6
· **Change in condition**	
Melting point/freezing point:	Not determined
Initial boiling point and boiling range:	> 100 °C
· **Flash point:**	Not applicable
· **Inflammability (solid, gaseous)**	Not applicable
· **Decomposition temperature:**	Not determined
· **Self-inflammability:**	Product is not selfigniting.
· **Explosive properties:**	Product is not explosive.
· **Critical values for explosion:**	
Lower:	Not determined
Upper:	Not determined
· **Vapour pressure at 20 °C:**	23 hPa
· **Density at 20 °C**	1.28 g/cm³
· **Relative density**	Not determined

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· **Vapour density**	Not determined
· **Evaporation rate**	Not determined
· **Solubility in / Miscibility with Water:**	miscible
· **Partition coefficient: n-octanol/water:**	Not determined
· **Viscosity:**	
dynamic:	Not determined
kinematic:	Not determined
· **Solvent content:**	
Water:	35.1 %
Solids content:	53.4 %
· **9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

· **10.1 Reactivity** No further relevant information available.
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known

SECTION 11: Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
ATE (Acute Toxicity Estimates)		
Oral	LD50	3,549 mg/kg (guinea pig)

7783-18-8 ammonium thiosulphate		
Oral	LD50	1,098 mg/kg (guinea pig)
		2,890 mg/kg (rat)
7664-38-2 phosphoric acid . %, orthophosphoric acid . %		
Oral	LD50	1,530 mg/kg (rat)
Dermal	LD50	2,740 mg/kg (rabbit)

· **Primary irritant effect:**
· **Skin corrosion/irritation**
Based on available data, the classification criteria are not met.
Causes skin irritation.
· **Serious eye damage/irritation**
Based on available data, the classification criteria are not met.
Causes serious eye irritation.
· **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
· **Additional toxicological information:**
This statement was deduced from the properties of the single components.

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· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
· **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-single exposure** Based on available data, the classification criteria are not met.
· **STOT-repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

· **12.1 Toxicity**

· **Aquatic toxicity:**
Not determined

7664-38-2 phosphoric acid . %, orthophosphoric acid . %	
LC50/96 h	138 mg/l (Gambusia affinis)

· **12.2 Persistence and degradability** Not determined

· **Behaviour in environmental systems:** Not determined
· **12.3 Bioaccumulative potential** Not determined
· **12.4 Mobility in soil** No further relevant information available.

· **Ecotoxical effects:**
No further relevant information available.
Not determined

· **Behaviour in sewage processing plants:** Not determined

· **Additional ecological information:**

· **General notes:**
This statement was deduced from the properties of the single components.
According to the criteria of the EU-classification and labelling "dangerous for environment"(1999/45/EG) the substance/ the product has to be classified as non-hazardous for the environment.
Water hazard class 2 (German Regulation) (Self-assessment): Water-endangering.
Do not allow product to reach ground water, water bodies or sewage system.
Do not allow undiluted product or large quantities of it to reach ground water, water bodies or sewage system.
At present there are no ecotoxicological assessments.
The product does not contain organically bounded halogens (AOX-free).
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable
· **vPvB:** Not applicable
· **12.6 Other adverse effects** No further relevant information available.

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.
Must be specially treated under adherence to official regulations.
Small amounts may be diluted with plenty of water and washed away. Dispose of bigger amounts in accordance with Local Authority requirements.

· **Uncleaned packagings:**
· **Recommendation:**
Packagings that cannot be cleaned are to be disposed of in the same manner as the product.

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EAK-No. 15 01 10
Non contaminated packagings can be used for recycling.
Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning.
· **Recommended cleaning agent:** Water, if necessary with cleaning agent.

SECTION 14: Transport information

· **14.1 UN-Number**	
· **ADR/RID, ADN, IMDG, IATA**	Void
· **14.2 UN proper shipping name**	
· **ADR/RID, ADN, IMDG, IATA**	Void
· **14.3 Transport hazard class(es)**	
· **ADR/RID, ADN, IMDG, IATA**	
· **Class**	Void
· **14.4 Packing group**	
· **ADR/RID, IMDG, IATA**	Void
· **14.5 Environmental hazards:**	Not applicable
· **14.6 Special precautions for user**	Not applicable
· **14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable
· **UN "Model Regulation":**	Void

SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**
· **Poisons Act**

· **Regulated explosives precursors**

7664-38-2	phosphoric acid . %, orthophosphoric acid . %	30%

· **Regulated poisons**

None of the ingredients is listed.

· **Reportable explosives precursors**

None of the ingredients is listed.

· **Reportable poisons**

1336-21-6	ammonia	10%

· **Labelling according to Regulation (EC) No 1272/2008**
The product is classified and labelled according to the GB CLP regulation.
· **Hazard pictograms**

GHS07

· **Signal word** Warning
· **Hazard statements**
H315 Causes skin irritation.

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H319 Causes serious eye irritation.

· **Precautionary statements**

P264	Wash thoroughly after handling.
P280	Wear protective gloves / eye protection / face protection.
P302+P352	IF ON SKIN: Wash with plenty of 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.
P321	Specific treatment (see on this label).
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

· **Directive 2012/18/EU**

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

· **National regulations**

Employment restrictions under the German Youth Employment Protection Act (JArbSchG) must be observed.
Employment restrictions under the German Maternity Protection Act (MuSchG) must be observed.

· **Water hazard class:** Water hazard class 2 (Self-assessment): water-endangering.

· **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.

· **Relevant phrases**

H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H400 Very toxic to aquatic life.

· **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
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
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
ATE: Acute toxicity estimate values
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2: Serious eye damage/eye irritation – Category 2
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· **Sources**

applicable EEC directives:

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Trade name: RA-4 BX-VR

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- 1907/2006
- 1272/2008

Internal physical tests, MSDS of the ingredients,
Information system on hazardous substances of the German Social Accident Insurance
(GESTIS-database on hazardous substances), http://www.dguv.de/ifa/en/gestis/stoffdb/index.jsp