

1 Identification

- **Product identifier**
- **Trade name:** WAV CALIBRATION P-2 TEST MIX
- **Article number** N0582152
- **Application of the substance / the mixture** Laboratory chemicals
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com

- **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

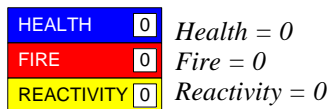
2 Hazard(s) identification

- **Classification of the substance or mixture**
The product is not classified according to the Globally Harmonized System (GHS).

- **Label elements**
- **GHS label elements** Void
- **Hazard pictograms** Void
- **Signal word** Void
- **Hazard statements** Void
- **Classification system:**
- **NFPA ratings (scale 0 - 4)**



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



- **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Substances
- **CAS No. Description**
7732-18-5 Water
- **Identification number(s)**
- **EC number:** 231-791-2

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- **Chemical characterization: Mixtures**
- **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

| | | | |
|-----------|-------------------|--|------|
| 7647-01-0 | Hydrochloric Acid |  Skin Corr. 1B, H314  STOT SE 3, H335 | 5.0% |
|-----------|-------------------|--|------|

· **Additional Components**

| | | |
|-----------|---|----------|
| 7723-14-0 | red phosphorus  Flam. Liq. 2, H225; Flam. Sol. 1, H228 | 0.01% |
| 7783-20-2 | ammonium sulphate  Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 | 0.01% |
| 7440-09-7 | potassium  Water-react. 1, H260  Skin Corr. 1B, H314 | 0.01% |
| 7439-93-2 | lithium  Water-react. 1, H260  Skin Corr. 1B, H314 | 0.002% |
| 7439-96-5 | manganese | 0.002% |
| 7439-98-7 | molybdenum | 0.002% |
| 7440-02-0 | nickel  Carc. 2, H351; STOT RE 1, H372  Skin Sens. 1, H317 | 0.002% |
| 7440-20-2 | Scandium from Scandium Oxide | 0.002% |
| 7440-23-5 | sodium  Water-react. 1, H260  Skin Corr. 1B, H314 | 0.002% |
| 7440-38-2 | Arsenic  Acute Tox. 3, H301; Acute Tox. 3, H331  Carc. 1A, H350 | 0.002% |
| 7439-91-0 | lanthanum | 0.002% |
| 7440-70-2 | calcium  Water-react. 2, H261 | 0.0001% |
| 7732-18-5 | Water | 94.9539% |

4 First-aid measures

- **Description of first aid measures**
- **General information:** No special measures required.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:** Generally the product does not irritate the skin.
- **After eye contact:** Rinse opened eye for several minutes under running water.
- **After swallowing:** If symptoms persist consult doctor.
- **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:** Use fire fighting measures that suit the environment.
- **Special hazards arising from the substance or mixture** No further relevant information available.
- **Advice for firefighters**
- **Protective equipment:** No special measures required.

6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures** Not required.
- **Environmental precautions:** Inform respective authorities in case of seepage into water course or sewage system.
- **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
- **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.
- **Protective Action Criteria for Chemicals**

· **PAC-1:**

| | | |
|-----------|------------------------------|------------------------|
| 7647-01-0 | Hydrochloric Acid | 1.8 ppm |
| 7723-14-0 | red phosphorus | 0.27 mg/m ³ |
| 7783-20-2 | ammonium sulphate | 13 mg/m ³ |
| 7440-09-7 | potassium | 2.3 mg/m ³ |
| 7439-93-2 | lithium | 3.3 mg/m ³ |
| 7439-96-5 | manganese | 3 mg/m ³ |
| 7439-98-7 | molybdenum | 30 mg/m ³ |
| 7440-02-0 | nickel | 4.5 mg/m ³ |
| 7440-20-2 | Scandium from Scandium Oxide | 30 mg/m ³ |
| 7440-23-5 | sodium | 13 mg/m ³ |
| 7440-38-2 | Arsenic | 1.5 mg/m ³ |
| 7439-91-0 | lanthanum | 30 mg/m ³ |

· **PAC-2:**

| | | |
|-----------|------------------------------|-----------------------|
| 7647-01-0 | Hydrochloric Acid | 22 ppm |
| 7723-14-0 | red phosphorus | 3 mg/m ³ |
| 7783-20-2 | ammonium sulphate | 140 mg/m ³ |
| 7440-09-7 | potassium | 25 mg/m ³ |
| 7439-93-2 | lithium | 36 mg/m ³ |
| 7439-96-5 | manganese | 5 mg/m ³ |
| 7439-98-7 | molybdenum | 330 mg/m ³ |
| 7440-02-0 | nickel | 50 mg/m ³ |
| 7440-20-2 | Scandium from Scandium Oxide | 330 mg/m ³ |
| 7440-23-5 | sodium | 140 mg/m ³ |
| 7440-38-2 | Arsenic | 17 mg/m ³ |
| 7439-91-0 | lanthanum | 330 mg/m ³ |

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| · PAC-3: | | |
|-----------|------------------------------|-------------------------|
| 7647-01-0 | Hydrochloric Acid | 100 ppm |
| 7723-14-0 | red phosphorus | 18 mg/m ³ |
| 7783-20-2 | ammonium sulphate | 840 mg/m ³ |
| 7440-09-7 | potassium | 150 mg/m ³ |
| 7439-93-2 | lithium | 220 mg/m ³ |
| 7439-96-5 | manganese | 1,800 mg/m ³ |
| 7439-98-7 | molybdenum | 2,000 mg/m ³ |
| 7440-02-0 | nickel | 99 mg/m ³ |
| 7440-20-2 | Scandium from Scandium Oxide | 2,000 mg/m ³ |
| 7440-23-5 | sodium | 870 mg/m ³ |
| 7440-38-2 | Arsenic | 100 mg/m ³ |
| 7439-91-0 | lanthanum | 2,000 mg/m ³ |

7 Handling and storage

- **Handling:**
- **Precautions for safe handling** No special measures required.
- **Information about protection against explosions and fires:** No special measures required.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and receptacles:** No special requirements.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** None.
- **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

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

· Control parameters

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

7647-01-0 Hydrochloric Acid

| | |
|-----|---|
| PEL | Ceiling limit value: 7 mg/m ³ , 5 ppm |
| REL | Ceiling limit value: 7 mg/m ³ , 5 ppm |
| TLV | Ceiling limit value: 2.98 mg/m ³ , 2 ppm |

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

· Exposure controls

· Personal protective equipment:

· General protective and hygienic measures:

The usual precautionary measures for handling chemicals should be followed.

· Breathing equipment: Not required.

· Protection of hands:

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

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

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· **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. 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.

· **Eye protection:** Goggles recommended during refilling.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **General Information**

· **Appearance:**

Form: Liquid
Color: Transparent

· **Odor:** Odorless

· **Odor threshold:** Not determined.

· **pH-value:** Not determined.

· **Change in condition**

Melting point/Melting range: 0 °C (32 °F)
Boiling point/Boiling range: 100 °C (212 °F)

· **Flash point:** Not applicable.

· **Flammability (solid, gaseous):** Not applicable.

· **Ignition temperature:**

Decomposition temperature: Not determined.

· **Auto igniting:** Product is not selfigniting.

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower: Not determined.
Upper: Not determined.

· **Vapor pressure at 20 °C (68 °F):** 23 hPa (17 mm Hg)

· **Density at 20 °C (68 °F):** 1 g/cm³ (8.345 lbs/gal)

· **Relative density:** Not determined.

· **Vapor density:** Not determined.

· **Evaporation rate:** Not determined.

· **Solubility in / Miscibility with**

Water: Not miscible or difficult to mix.

· **Partition coefficient (n-octanol/water):** Not determined.

· **Viscosity:**

Dynamic: Not determined.
Kinematic: Not determined.

· **Solvent content:**

Organic solvents: 0.0 %

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| | |
|--------------------------|--|
| Water: | 95.0 % |
| Solids content: | 3.1 % |
| Other information | No further relevant information available. |

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 dangerous reactions known.
- **Conditions to avoid** No further relevant information available.
- **Incompatible materials:** No further relevant information available.
- **Hazardous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**
- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** No irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product is not subject to classification according to internally approved calculation methods for preparations.
When used and handled according to specifications, the product does not have any harmful effects according to our experience and the information provided to us.

- **Carcinogenic categories**

| | | |
|--|-------------------|----|
| · IARC (International Agency for Research on Cancer) | | |
| 7647-01-0 | Hydrochloric Acid | 3 |
| 7440-02-0 | nickel | 2B |
| 7440-38-2 | Arsenic | 1 |
| · NTP (National Toxicology Program) | | |
| 7440-02-0 | nickel | R |
| 7440-38-2 | Arsenic | K |
| · OSHA-Ca (Occupational Safety & Health Administration) | | |
| 7440-38-2 | Arsenic | |

12 Ecological information

- **Toxicity**
- **Aquatic toxicity:** No further relevant information available.
- **Persistence and degradability** No further relevant information available.
- **Behavior in environmental systems:**
- **Bioaccumulative potential** No further relevant information available.
- **Mobility in soil** No further relevant information available.

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- **Additional ecological information:**
- **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
- **Results of PBT and vPvB assessment**
- **PBT:** Not applicable.
- **vPvB:** Not applicable.
- **Other adverse effects** No further relevant information available.

13 Disposal considerations

- **Waste treatment methods**
- **Recommendation:** Smaller quantities can be disposed of with household waste.
- **Uncleaned packagings:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

| | |
|-------------------------------------|-----------------------------|
| · UN-Number | |
| · DOT, ADR, IMDG, IATA | UN1789 |
| · UN proper shipping name | |
| · DOT | Hydrochloric acid |
| · ADR | Hydrochloric acid |
| | HYDROCHLORIC ACID, solution |
| · IMDG, IATA | HYDROCHLORIC ACID |
| · Transport hazard class(es) | |
| · DOT | |
| | |
| · Class | 8 Corrosive substances |
| · Label | 8 |
| · ADR | |
| | |
| · Class | 8 (C1) Corrosive substances |
| · Label | 8 |
| · IMDG, IATA | |
| | |
| · Class | 8 Corrosive substances |
| · Label | 8 |

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| | |
|---|--|
| · Packing group · DOT, ADR, IMDG, IATA | <i>III</i> |
| · Environmental hazards: · Marine pollutant: | <i>No</i> |
| · Special precautions for user · Danger code (Kemler): · EMS Number: · Segregation groups · Stowage Category | <i>Warning: Corrosive substances 80 F-A,S-B Acids E</i> |
| · Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code | <i>Not applicable.</i> |
| · Transport/Additional information: · DOT · Quantity limitations | <i>On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L</i> |
| · ADR · Excepted quantities (EQ) | <i>Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i> |
| · IMDG · Limited quantities (LQ) · Excepted quantities (EQ) | <i>5L Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml</i> |
| · UN "Model Regulation": | <i>UN 1789 HYDROCHLORIC ACID, 8, III</i> |

15 Regulatory information

| | | |
|---|--|----------|
| · Safety, health and environmental regulations/legislation specific for the substance or mixture | | |
| 7732-18-5 | Water | 94.9539% |
| 7647-01-0 | Hydrochloric Acid ⚠ Skin Corr. 1B, H314 ⚠ STOT SE 3, H335 | 5.0% |
| 7783-20-2 | ammonium sulphate ⚠ Skin Irrit. 2, H315; Eye Irrit. 2A, H319; STOT SE 3, H335 | 0.01% |

· **Sara**

| | |
|--|-------------------|
| · Section 355 (extremely hazardous substances): | |
| 7647-01-0 | Hydrochloric Acid |
| 7723-14-0 | red phosphorus |
| · Section 313 (Specific toxic chemical listings): | |
| 7647-01-0 | Hydrochloric Acid |
| 7723-14-0 | red phosphorus |
| 7783-20-2 | ammonium sulphate |
| 7439-96-5 | manganese |

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| | |
|-----------|---------|
| 7440-02-0 | nickel |
| 7440-38-2 | Arsenic |

· **TSCA (Toxic Substances Control Act):**
All ingredients are listed.

| | |
|-----------|------------------------------|
| 7647-01-0 | Hydrochloric Acid |
| 7723-14-0 | red phosphorus |
| 7783-20-2 | ammonium sulphate |
| 7440-09-7 | potassium |
| 7439-93-2 | lithium |
| 7439-96-5 | manganese |
| 7439-98-7 | molybdenum |
| 7440-02-0 | nickel |
| 7440-20-2 | Scandium from Scandium Oxide |
| 7440-23-5 | sodium |
| 7440-38-2 | Arsenic |
| 7439-91-0 | lanthanum |
| 7440-70-2 | calcium |
| 7732-18-5 | Water |

· **Proposition 65**

· **Chemicals known to cause cancer:**

| | |
|-----------|---------|
| 7440-02-0 | nickel |
| 7440-38-2 | Arsenic |

· **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.

· **Carcinogenicity categories**

· **EPA (Environmental Protection Agency)**

| | | |
|-----------|----------------|---|
| 7723-14-0 | red phosphorus | D |
| 7439-96-5 | manganese | D |
| 7440-38-2 | Arsenic | A |

· **TLV (Threshold Limit Value established by ACGIH)**

| | | |
|-----------|-------------------|----|
| 7647-01-0 | Hydrochloric Acid | A4 |
| 7439-98-7 | molybdenum | A3 |
| 7440-02-0 | nickel | A5 |
| 7440-38-2 | Arsenic | A1 |

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

| | |
|-----------|---------|
| 7440-02-0 | nickel |
| 7440-38-2 | Arsenic |

· **GHS label elements** Void

· **Hazard pictograms** Void

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- **Signal word** Void
- **Hazard statements** Void
- **National regulations:**
- **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.
- **Water hazard class:** *Water hazard class 1 (Self-assessment): slightly hazardous for water.*
- **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 Other information

Disclaimer

The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Contact:**

With in the USA: 1-(800)-762-4000

Out side the USA: 1-(203)-712-8488

· **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 européen sur le transport 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

ACGIH: American Conference of Governmental Industrial Hygienists

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)

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

Skin Corr. 1B: Skin corrosion/irritation – Category 1B

STOT SE 3: Specific target organ toxicity (single exposure) – Category 3

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