

SAFETY DATA SHEET

Be Right[™]

Issue Date 15-Jun-2016

Revision Date 26-Jan-2018

Version 2.1

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1. IDENTIFICATION

| <u>Product identifier</u> Product Name | pPb-3 Eluant Solution | | |
|--|-----------------------|--|--|
| Other means of identification Product Code(s) | 2368749 | | |
| Safety data sheet number | M00617 | | |

Recommended use of the chemical and restrictions on useRecommended UseLead test reagent.Uses advised againstNone.Restrictions on useNone.

Details of the supplier of the safety data sheet

Manufacturer Address

Hach Company P.O.Box 389 Loveland, CO 80539 USA +1(970) 669-3050***

Emergency telephone number

+1(303) 623-5716 - 24 Hour Service +1(515)232-2533 - 8am - 4pm CST***

2. HAZARDS IDENTIFICATION

Classification

Regulatory Status

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

| Serious eye damage/eye irritation Category 1*** |
|---|
|---|

Hazards not otherwise classified (HNOC)

Not applicable

Label elements

Signal word - Danger***



Hazard statements

H318 - Causes serious eye damage***

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Precautionary statements

P280 - Wear protective gloves/protective clothing/eye protection/face protection P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P310 - Immediately call a POISON CENTER or doctor/physician***

Other Hazards Known

Not applicable

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance

Not applicable***

Mixture

Percent ranges are used where confidential product information is applicable.***

| Chemical name | CAS No. | Percent Range | HMRIC # |
|---------------|-----------|------------------|---------|
| Nitric acid | 7697-37-2 | <1% | - |

4. FIRST AID MEASURES

Description of first aid measures

| General advice | Immediate medical attention is required. Show this safety data sheet to the doctor in attendance.*** | | |
|------------------------------------|---|--|--|
| Inhalation | Remove to fresh air. Get medical attention immediately if symptoms occur.*** | | |
| 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 | Clean mouth with water and drink afterwards plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Call a physician.*** | | |
| Self-protection of the first aider | Avoid contact with skin, eyes or clothing.*** | | |
| Most important symptoms and effe | ects, both acute and delayed | | |
| Symptoms | Burning sensation.*** | | |
| Indication of any immediate medic | al attention and special treatment needed | | |
| Note to physicians | Treat symptomatically. | | |
| | | | |
| | 5. FIRE-FIGHTING MEASURES | | |
| Suitable Extinguishing Media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. | | |

Unsuitable Extinguishing Media Caution: Use of water spray when fighting fire may be inefficient.

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|--|---|--|
| Specific hazards arising from the chemical | No information available. | |
| Hazardous combustion products | This material will not burn. | |
| Special protective equipment for fire-fighters | Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. | |

6. ACCIDENTAL RELEASE MEASURES

| U.S. Notice | Only persons properly qualified to respond to an emergency involving hazardous substances may respond to a spill according to federal regulations (OSHA 29 CFR 1910.120(a)(v)) and per your company's emergency response plan and guidelines/procedures. See Section 13, Special Instructions for disposal assistance. Outside of the US, only persons properly qualified according to state or local regulations should respond to a spill involving chemicals. | | |
|-------------------------------------|--|--|--|
| Personal precautions, protective ed | quipment and emergency procedures | | |
| Personal precautions | Avoid contact with skin, eyes or clothing. Use personal protective equipment as required.*** | | |
| Other Information | Refer to protective measures listed in Sections 7 and 8.*** | | |
| Environmental precautions | | | |
| Environmental precautions | Prevent further leakage or spillage if safe to do so.*** | | |
| Methods and material for containm | ent and cleaning up | | |
| Methods for containment | Prevent further leakage or spillage if safe to do so. | | |
| Methods for cleaning up | Pick up and transfer to properly labeled containers. | | |
| Prevention of secondary hazards | Clean contaminated objects and areas thoroughly observing environmental regulations. | | |
| Reference to other sections | See section 8 for more information. See section 13 for more information. | | |

7. HANDLING AND STORAGE

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.*** | | |
|--|--|--|--|
| Conditions for safe storage, including any incompatibilities | | | |
| Storage Conditions | Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.*** | | |
| Flammability class | Not applicable | | |

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

| Chemical name | ACGIH TLV | OSHA PEL | NIOSH IDLH | |
|--|---|---|-------------------------------|--|
| Nitric acid | STEL: 4 ppm | TWA: 2 ppm | IDLH: 25 ppm | |
| CAS#: 7697-37-2 | TWA: 2 ppm*** | TWA: 5 mg/m ³ | TWA: 2 ppm | |
| | | (vacated) TWA: 2 ppm | TWA: 5 mg/m ³ | |
| | | (vacated) TWA: 5 mg/m ³ | STEL: 4 ppm | |
| | | (vacated) STEL: 4 ppm | STEL: 10 mg/m ^{3***} | |
| | | (vacated) STEL: 10 mg/m ^{3***} | | |
| Appropriate engineering controls Showers Engineering Controls Showers Eyewash stations Ventilation systems. | | | | |
| Individual protection measures, such as personal protective equipmentRespiratory protectionNo protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required. | | | | |
| Hand Protection | Wear suitable gloves.*** | | | |
| Eye/face protection | Tight sealing safety goggles.*** | | | |
| Skin and body protection | Wear suitable protective clothing.*** | | | |
| 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.*** | | | |
| Environmental exposure controls | | vised if significant spillages can round or into any body of water | | |
| Thermal hazards | None under normal processing |]. | | |

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

| Physical state Appearance Odor | aqueous solution None | Liquid | Color Odor threshold | colorless No data ava | ailable |
|--------------------------------------|--------------------------|--------|--|--------------------------|---------------------------------|
| Property_ | | | Values | | Remarks • Method |
| Molecular weight pH | | | No data available 1.4 | | *** |
| Melting point/free | ••• | | -3*** °C*** /*** 27*** °F*** | | *** |
| Boiling point / bo | | | 99*** °C*** /*** 210*** °F*** | | *** |
| Evaporation rate | | | 0.86 (water = 1) 17.477 mm Hg*** /*** 2.33 kPa*** | · | Estimation based on theoretical |
| Vapor pressure | | | °C*** /*** 68 °F*** | at 20 | calculation *** |
| Vapor density (ai | r = 1) | | $0.62 (air = 1)^{***}$ | | *** |
| Specific gravity (| water = 1 / air = 1) | | 1.007 | | *** |
| Partition Coeffici | ent (n-octanol/wat | er) | Not applicable*** | | |
| Soil Organic Car | bon-Water Partition | า่ | Not applicable*** | | |
| Coefficient | | | | | |
| Autoignition tem | perature | | No data available | | |
| Decomposition to | | | No data available | | |
| Dynamic viscosi | ty | | ~ 1 cP (mPa s)*** at*** 20 °C*** / | | |
| Kinematic viscos | sity | | ~ 0.993 cSt (mm ² /s)*** at*** 20 °C | C*** /*** 68 | |

°F***

Solubility(ies)

Water solubility

| Water solubility classification | Water solubility | Water Solubility Temperature |
|---------------------------------|------------------|------------------------------|
| Soluble | > 1000 mg/L*** | 25 °C*** /*** 77 °F*** |

Solubility in other solvents

| Chemical Name | Solubility classification | Solubility | Solubility Temperature |
|---------------|---------------------------|----------------|------------------------|
| Acid | Soluble | > 1000 mg/L*** | 25 °C*** /*** 77 °F*** |

Other Information

Metal Corrosivity

Steel Corrosion Rate Aluminum Corrosion Rate *** 2.9 mm/yr*** /*** 0.11 in/yr*** *** 1.22 mm/yr*** /*** 0.05 in/yr***

Volatile Organic Compounds (VOC) Content

| Chemical name | CAS No. | Volatile organic compounds (VOC) content | CAA (Clean Air Act) |
|---------------|-----------|---|---------------------|
| Nitric acid | 7697-37-2 | No data available | - |

Explosive properties

| Upper explosion limit Lower explosion limit | | No data available No data available |
|---|--------------------------|---|
| Flammable properties | | |
| Flash point Method | | No data available No information available |
| Flammability Limit in Air Upper flammability limit: Lower flammability limit: | | No data available No data available |
| Oxidizing properties | | No data available. |
| Bulk density | | Not applicable*** |
| Particle Size | No information available | |
| Particle Size Distribution | No information available | |

10. STABILITY AND REACTIVITY

Reactivity Not applicable.

Chemical stability Stability

Stable under normal conditions.

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Explosion data Sensitivity to Mechanical Impact None Sensitivity to Static Discharge None.

Possibility of Hazardous Reactions Possibility of Hazardous Reactions None under normal processing.

Hazardous polymerization

None under normal processing.

<u>Conditions to avoid</u> Conditions to avoid

None known based on information supplied.

Incompatible materials

Strong acids. Strong bases. Strong oxidizing agents.***

Hazardous Decomposition Products

Thermal decomposition can lead to release of irritating and toxic gases and vapors.***

11. TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure Product Information ***

| Inhalation | No known effect based on information supplied. |
|--|--|
| Eye contact | Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.*** |
| Skin contact | May cause irritation.*** |
| Ingestion | Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.*** |
| Symptoms | Redness. Burning. May cause blindness.*** |
| Aggravated Medical Conditions Toxicologically synergistic products | Eye disorders.*** None known. |
| Toxicokinetics, metabolism and distribution | See ingredients information below.*** |

| Chemical name | Toxicokinetics, metabolism and distribution |
|-----------------|---|
| Nitric acid | Acute mortality can be attributed to the nitric acids corrosive effects.*** |
| (<1%) | |
| CAS#: 7697-37-2 | |

Product Acute Toxicity Data Oral Exposure Route Dermal Exposure Route Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

No data available No data available No data available No data available No data available

Unknown Acute Toxicity 0% of the mixture consists of ingredient(s) of unknown toxicity.***

Acute Toxicity Estimations (ATE)

| ATEmix (oral) | No information available |
|-------------------------------|--------------------------|
| ATEmix (dermal) | No information available |
| ATEmix (inhalation-dust/mist) | No information available |
| ATEmix (inhalation-vapor) | No information available |
| ATEmix (inhalation-gas) | No information available |

| | cicity Data | | | If such the later of the test state the state of the stat | | |
|---|---|--|--|--|---|--|
| Oral Exposure Route | | | | If available, see data below*** | | |
| Dermal Exposure Ro | | | | If available, see data below*** | | |
| nhalation (Dust/Mist | | | _ | If available, see data below*** | | |
| Chemical name | Endpoint | Reported | Exposure | Toxicological effects | Key literature references and | |
| <u> </u> | type | dose | time | | sources for data | |
| Nitric acid | Rat | 0.13*** | 4*** hours*** | None reported | RTECS (Registry of Toxic | |
| (<1%) | LC50*** | mg/L*** | | | Effects of Chemical | |
| CAS#: 7697-37-2 | | | | | Substances)*** | |
| nhalation (Vapor) Ex | | | | If available, see data below*** | 1 | |
| Chemical name | Endpoint | Reported | Exposure | Toxicological effects | Key literature references and | |
| | type | dose | time | | sources for data | |
| Nitric acid | Rat | 67*** mg/L*** | 4 hours*** | None reported | No information available | |
| (<1%) | LC50*** | | | | | |
| CAS#: 7697-37-2 | | | | | | |
| nhalation (Gas) Exp | osure Route | | | If available, see data below | | |
| | | | | | | |
| Product Specific Tar | | xicity Single E | xposure Data | <u>1</u> | | |
| Oral Exposure Route | | | | No data available | | |
| Dermal Exposure Ro | ute | | | No data available | | |
| nhalation (Dust/Mist |) Exposure R | oute | | No data available | | |
| | | | | | | |
| nhalation (Vapor) Ex | | | | No data available | | |
| nhalation (Vapor) Ex nhalation (Gas) Exp | posure Route | | | No data available No data available | | |
| nhalation (Gas) Exp | posure Route | e | | No data available | | |
| nhalation (Gas) Exp | (posure Route osure Route arget Organ 1 | e | e Exposure Da | No data available | | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route | (posure Route osure Route <u>arget Organ 1</u> | e | e Exposure Da | No data available ata If available, see data below*** | | |
| nhalation (Gas) Exp <u>ngredient Specific T</u> Dral Exposure Route Dermal Exposure Ro | (posure Route osure Route <u>arget Organ 1</u> | e Foxicity Single | e Exposure Da | No data available ata If available, see data below*** If available, see data below*** | | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route | (posure Route osure Route <u>arget Organ 1</u> | e | Exposure | No data available ata If available, see data below*** | | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name | (posure Route osure Route arget Organ T o ute | e Foxicity Single Reported dose | Exposure time | No data available ata If available, see data below*** If available, see data below*** | sources for data | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name Nitric acid | arget Organ ute Endpoint type Rat | e Foxicity Single Reported dose 226500*** | Exposure | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood | sources for data RTECS (Registry of Toxic | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name | arget Organ e ute Endpoint type | e Foxicity Single Reported dose | Exposure time | No data available ata If available, see data below*** If available, see data below*** Toxicological effects | sources for data RTECS (Registry of Toxic | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name Nitric acid | arget Organ ute Endpoint type Rat | e Foxicity Single Reported dose 226500*** | Exposure time None | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood | sources for data RTECS (Registry of Toxic | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 | arget Organ ute Endpoint type Rat TDLo**** | e Foxicity Single Reported dose 226500*** mg/kg*** | Exposure time None | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe | sources for data RTECS (Registry of Toxic Effects of Chemical | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist | xposure Route osure Route arget Organ T oute Endpoint type Rat TD⊾o*** | e Foxicity Single Reported dose 226500*** mg/kg*** oute | Exposure time None | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist nhalation (Vapor) Ex | xposure Route osure Route arget Organ T oute Endpoint type Rat TD∟₀*** | Reported dose 226500*** mg/kg*** oute | Exposure time None reported | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical Substances)*** | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist | xposure Route osure Route arget Organ ute Endpoint type Rat TD⊾o***) Exposure R (posure Route Endpoint | e <u>Foxicity Single</u> <u>Reported</u> <u>dose</u> <u>226500***</u> mg/kg*** oute e Reported | Exposure time None reported Exposure | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical Substances)*** | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist nhalation (Vapor) Ex Chemical name | xposure Route arget Organ ute Endpoint type Rat TD∟₀***) Exposure R (posure Route Endpoint type | e <u>Foxicity Single</u> Reported <u>dose</u> <u>226500***</u> mg/kg*** oute e Reported dose | Exposure time None reported Exposure time | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** If available, see data below*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical Substances)*** Key literature references and sources for data | |
| nhalation (Gas) Exp ngredient Specific T Dral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist nhalation (Vapor) Ex Chemical name Nitric acid | xposure Route arget Organ ute Endpoint type Rat TD⊾o****) Exposure R (posure Route Endpoint type Rat Rat | e <u>Foxicity Single</u> Reported <u>dose</u> 226500*** mg/kg*** oute e Reported <u>dose</u> <u>460***</u> | Exposure time None reported Exposure | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical Substances)*** Key literature references and sources for data RTECS (Registry of Toxic | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist nhalation (Vapor) Ex Chemical name Nitric acid (<1%) | xposure Route arget Organ ute Endpoint type Rat TD∟₀***) Exposure R (posure Route Endpoint type | e <u>Foxicity Single</u> Reported <u>dose</u> <u>226500***</u> mg/kg*** oute e Reported dose | Exposure time None reported Exposure time | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** If available, see data below*** | sources for data RTECS (Registry of Toxic Effects of Chemical Substances)*** Key literature references and sources for data RTECS (Registry of Toxic Effects of Chemical | |
| nhalation (Gas) Exp ngredient Specific T Oral Exposure Route Dermal Exposure Ro Chemical name Nitric acid (<1%) CAS#: 7697-37-2 nhalation (Dust/Mist nhalation (Vapor) Ex Chemical name Nitric acid | xposure Route arget Organ ute Endpoint type Rat TD⊾o****) Exposure R (posure Route Endpoint type Rat Rat | e <u>Foxicity Single</u> Reported <u>dose</u> 226500*** mg/kg*** oute e Reported <u>dose</u> <u>460***</u> | Exposure time None reported Exposure time | No data available ata If available, see data below*** If available, see data below*** Toxicological effects Blood Methemoglobinemia-Carboxyhe moglobin*** If available, see data below*** If available, see data below*** | RTECS (Registry of Toxic Effects of Chemical Substances)*** Key literature references and sources for data RTECS (Registry of Toxic | |

Aspiration toxicity

If available, see data below*** Kinematic viscosity

~ 0.993 cSt (mm²/s)***

<u>Product Skin Corrosion/Irritation Data</u> No data available.

Ingredient Skin Corrosion/Irritation Data

If available, see data below***

| ſ | Chemical name | Test method | Species | Reported | Exposure | Results | Key literature |
|---|---------------|-------------|---------|----------|----------|---------|------------------|
| | | | | dose | time | | references and |
| | | | | | | | sources for data |

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| 1 | Nitric acid | Existing human | Human*** | None | None | Corrosive to skin*** | ERMA (New Zealands |
|---|-----------------|----------------|----------|----------|----------|----------------------|--------------------|
| | (<1%) | experience*** | | reported | reported | | Environmental Risk |
| | CAS#: 7697-37-2 | | | | | | Management |
| | | | | | | | Authority)*** |

Product Serious Eye Damage/Eye Irritation Data

No data available.

Ingredient Eye Damage/Eye Irritation Data

If available, see data below***

| Chemical name | Test method | Species | Reported dose | Exposure time | Results | Key literature references and sources for data |
|---|---------------------------------|----------|------------------|------------------|----------------------|---|
| Nitric acid (<1%) CAS#: 7697-37-2 | Existing human experience*** | Human*** | None reported | None reported | Corrosive to eyes*** | ERMA (New Zealands Environmental Risk Management Authority)*** |

Sensitization Information

| Product Sensitization Data Skin Sensitization Exposure Route Respiratory Sensitization Exposur | | | No data available. No data available. | | |
|---|------------------------|------------------|--|---|--|
| Ingredient Sensitization Data Skin Sensitization Exposure Route Respiratory Sensitization Exposur | | | If available, see data below. If available, see data below. | | |
| Chronic Toxicity Information | | | | | |
| Product Specific Target Organ To Oral Exposure Route Dermal Exposure Route Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route | oute | | No data available. No data available. No data available. No data available. No data available. | | |
| Ingredient Specific Target Organ T Oral Exposure Route Dermal Exposure Route | Coxicity Repea | at Exposure D | <u>ata</u> If available, see data below If available, see data below | | |
| Inhalation (Dust/Mist) Exposure R | oute | | If available, see data below*** | | |
| Chemical name Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data | |
| Nitric acid Rat (<1%) TCLo**** CAS#: 7697-37-2 | 0.000050*** mg/L*** | 3*** days*** | Lungs, Thorax, or Respiration Respiratory depression*** | RTECS (Registry of Toxic Effects of Chemical Substances)*** | |
| Inhalation (Vapor) Exposure Route Chemical name Endpoint | | Eveneouro | If available, see data below*** | Key literature references and | |
| Chemical name Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data | |
| Nitric acid (<1%) CAS#: 7697-37-2 Inhalation (Gas) Exposure Route | 0.001071*** mg/L*** | 84*** days*** | Behavioral Muscle contraction or spasticity Biochemical Enzyme inhibition, induction, or change in blood or tissue levels (true cholinesterase) Kidney, Ureter, or Bladder Other changes in urine composition*** If available, see data below | RTECS (Registry of Toxic Effects of Chemical Substances)*** | |

Product Carcinogenicity Data

Oral Exposure Route Dermal Exposure Route Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

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No data available No data available No data available No data available No data available

Ingredient Carcinogenicity Data

| Chemical name | CAS No. | ACGIH | IARC | NTP | OSHA |
|---------------|-----------|-------|------------|-----|------|
| Nitric acid | 7697-37-2 | - | Group 2A | - | X*** |
| | | | Group 1*** | | |

Legend

| ACGIH (American Conference of Governmental Industrial Hygienists) | Does not apply |
|---|-------------------------------------|
| IARC (International Agency for Research on Cancer) | Group 2A - Probably Carcinogenic to |
| | Humans |
| | Group 1 - Carcinogenic to Humans*** |
| NTP (National Toxicology Program) | Does not apply |
| OSHA (Occupational Safety and Health Administration of the US Department of | X - Present*** |
| Labor) | |

Oral Exposure Route Dermal Exposure Route Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

Product Germ Cell Mutagenicity invitro Data No data available.

Ingredient Germ Cell Mutagenicity invitro Data No data available

Product Germ Cell Mutagenicity invivo Data **Oral Exposure Route Dermal Exposure Route** Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

Ingredient Germ Cell Mutagenicity invivo Data **Oral Exposure Route Dermal Exposure Route** Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

Product Reproductive Toxicity Data **Oral Exposure Route Dermal Exposure Route** Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route Inhalation (Gas) Exposure Route

If available, see data below If available, see data below

No data available No data available No data available No data available No data available

If available, see data below If available, see data below

No data available No data available No data available No data available No data available

Ingredient Reproductive Toxicity Data

| Oral Exposure Route If available, see data below*** | | | | | | |
|---|----------------|----------------------|------------------|--|---|--|
| Chemical name Endpoint Reported type dose | | | Exposure time | Toxicological effects | Key literature references and sources for data | |
| Nitric acid (<1%) CAS#: 7697-37-2 | Rat TD⊾₀*** | 21150*** mg/kg*** | 21*** days*** | Effects on Embryo or Fetus Fetotoxicity (except death e.g. stunted fetus)*** | RTECS (Registry of Toxic | |

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| Chemical name | Endpoint type | Reported dose | Exposure time | Toxicological effects | Key literature references and sources for data |
|--|------------------|---------------------|------------------|--|---|
| Nitric acid (<1%) CAS#: 7697-37-2 | Rat TD⊾₀*** | 2345*** mg/kg*** | 18*** days*** | Effects on Newborn*** | RTECS (Registry of Toxic Effects of Chemical Substances)*** |
| Inhalation (Dust/Mist) Exposure Route Inhalation (Vapor) Exposure Route | | | | If available, see data below If available, see data below If available, see data below | |

12. ECOLOGICAL INFORMATION

Ecotoxicity

Not considered to be harmful to aquatic life

Product Ecological Data

Aquatic toxicity

Fish Crustacea Algae No data available No data available No data available

Ingredient Ecological Data

Aquatic toxicity

| Fish | No data available | | | | |
|-----------------|-------------------|--|----------|----------------|-------------------------------|
| Crustacea | | If available, see ingredient data below*** | | | |
| Chemical name | Exposure | Species | Endpoint | Reported | Key literature references and |
| | time | | type | dose | sources for data |
| Nitric acid | 48 Hours*** | Carcinu maenas*** | LC50*** | 180*** mg/L*** | GESTIS (Information System on |
| (<1%) | | | | _ | Hazardous Substances of the |
| CAS#: 7697-37-2 | | | | | German Social Accident |
| | | | | | Insurance)*** |

Algae

No data available

Not applicable***

Not applicable***

Other Information

Persistence and degradability

Product Biodegradability Data No data available.

Ingredient Biodegradability Data

Bioaccumulation

Product Bioaccumulation Data No data available.

Partition Coefficient (n-octanol/water)

Ingredient Bioaccumulation Data

Mobility

Soil Organic Carbon-Water Partition Coefficient

Water solubility

| Water solubility classification | Water solubility | Water Solubility Temperature |
|---------------------------------|------------------|------------------------------|
| Soluble | > 1000 mg/L*** | 25 °C*** /*** 77 °F*** |

Other adverse effects

No information available.

13. DISPOSAL CONSIDERATIONS

| | 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. |
| US EPA Waste Number | D002*** |
| | |
| Special instructions for disposal | Dilute to 3 to 5 times the volume with cold water. Adjust to a pH between 6 and 9 with an alkali, such as soda ash or sodium bicarbonate. Open cold water tap completely, slowly pour the reacted material to the drain. |

| 14. TRANSPORT INFORMATION | | | |
|---------------------------|-----------------------------------|--|--|
| U.S. DOT | Not regulated | | |
| TDG | Not regulated*** | | |
| ΙΑΤΑ | Not regulated*** | | |
| IMDG | Not regulated*** | | |
| Note: | No special precautions necessary. | | |

Additional information

There is a possibility that this product could be contained in a reagent set or kit composed of various compatible dangerous goods. If the item is not in a reagent set or kit, the classification given above applies.

If the item is part of a reagent set or kit the classification would change to the following:

UN3316 Chemical Kit, Hazard Class 9, Packing Group II or III.

If the item is not regulated, the Chemical Kit classification does not apply.

15. REGULATORY INFORMATION

| National Inventories | | |
|----------------------|----------|--|
| TSCA | Complies | |
| DSL/NDSL | Complies | |

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory **DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List

International Inventories

| EINECS/ELINCS | Complies |
|---------------|----------|
| ENCS | Complies |
| IECSC | Complies |
| KECL | Complies |
| PICCS | Complies |
| TCSI | Complies |

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AICS NZIoC Complies Complies

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

TCSI - Taiwan Chemical Substances Inventory

AICS - Australian Inventory of Chemical Substances

NZIOC - New Zealand Inventory of Chemicals

US Federal Regulations

<u>SARA 313</u>

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

| Chemical name | SARA 313 - Threshold Values % | |
|--------------------------------|-------------------------------|--|
| Nitric acid (CAS #: 7697-37-2) | 1.0*** | |

SARA 311/312 Hazard Categories

| Yes*** |
|--------|
| Yes*** |
| No |
| No |
| No |
| |

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

| Chemical name | CWA - Reportable Quantities | CWA - Toxic Pollutants | CWA - Priority Pollutants | CWA - Hazardous Substances |
|--------------------------|--------------------------------|------------------------|------------------------------|-------------------------------|
| Nitric acid 7697-37-2 | 1000 lb*** | - | - | X*** |

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

| Chemical name | Hazardous Substances RQs | CERCLA/SARA RQ | Reportable Quantity (RQ) |
|---------------|--------------------------|----------------|--------------------------|
| Nitric acid | 1000 lb*** | 1000 lb*** | RQ 1000 lb final RQ |
| 7697-37-2 | | | RQ 454 kg final RQ*** |

U.S. - Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues

| Chemical name | U.S Department of Homeland Security - Chemical Facility Anti-Terrorism Standards (CFATS) - Security Issues |
|-----------------|---|
| | Release - Toxic; Theft - Explosives/Improvised Explosive Device |
| (<1%) | Precursors*** |
| CAS#: 7697-37-2 | |

US State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals

U.S. State Right-to-Know Regulations

| Chemical name | New Jersey | Massachusetts | Pennsylvania |
|---------------|------------|---------------|--------------|
| Nitric acid | X*** | X*** | X*** |
| 7697-37-2 | | | |

U.S. EPA Label Information

16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION

Special Comments

None

Additional information

Global Automotive Declarable Substance List (GADSL) Not applicable

NFPA and HMIS Classifications

| NFPA | Health hazards - 3*** | Flammability - 0 | Instability - 0 | Physical and Chemical Properties - |
|------|-----------------------|------------------|----------------------|---------------------------------------|
| HMIS | Health hazards - 3*** | Flammability - 0 | Physical Hazards - 0 | Personal protection - X |
| | | | | - See section 8 for more |
| | | | | information |

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

| NIOSH IDLH ACGIH NDF | | Immediately Dangerous ACGIH (American Confe no data | ntal Industrial Hygienists) | | | | |
|---|---|---|-----------------------------|---|--|--|--|
| Legend - Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION | | | | | | | |
| TWA | TWA (time-weighted average) | | STEL | STEL (Short Term Exposure Limit) | | | |
| MAC | Maximum Allowable Concentration | | Ceiling | Ceiling Limit Value | | | |
| X | Listed | | Vacated | These values have no official status. The only binding levels of contaminants are those listed in the final OSHA PEL. These lists are for reference purposes only. Please note that some reference state regulations of these "liberated" exposure limits in their state regulations. | | | |
| SKN* RSP+ C M | Skin designation Respiratory sensit Carcinogen mutagen | ization | SKN+ ** R | Skin sensitization Hazard Designation Reproductive toxicant | | | |
| Prepared By | | Hach Product Compliance Department | | | | | |
| Issue Date | | 15-Jun-2016 | | | | | |
| Revision Date | | 26-Jan-2018 | | | | | |
| | | | | Dama 42 / 44 | | | |

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Revision Note

None

Disclaimer

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it in individual site safety programs in accordance with applicable hazard communication standards and regulations.

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End of Safety Data Sheet