

Product Name: Proteome Profiler Human Ubiquitin Array

Reviewed on: 11 February 2015

1. Identification of Substance:

- **Other means of identification: Catalog Number: ARY027**
Components: Array, Array Buffer 1, Array Buffer 2, Wash Buffer Concentrate, Detection Antibody Cocktail, Streptavidin-HRP (contains ProClin 300), Chemi Reagents 1 and 2 (contain Boric Acid).
- **GHS product identifier:** Proteome Profiler Human Ubiquitin Array
- **Application of the substance / the preparation:** For Research Use Only
- **Manufacturer/Supplier:**
bio-techne/R&D Systems™
614 McKinley Place N.E.
Minneapolis, MN 55413 USA
1-800-343-7475
- **Emergency information:** In case of a chemical emergency, spill, fire, or exposure, call R&D Systems at (612) 379-2956 or (800)-343-7475. In Europe call +44(0)1235-529449.

2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]**
Chemi Reagents 1 and 2 and Streptavidin-HRP: contain Boric Acid
Toxic to Reproduction – Category 2
 - **Signal Word:** WARNING
 - **Hazard statements:** H361 Suspected of damaging fertility or the unborn child.
 - **Precautionary statements:** P201 Obtain special instructions before use. P202 Do not handle until all safety precautions have been read and understood. P280 Wear protective gloves, protective clothing and eye protection.
- Response:**
IF EXPOSED OR CONCERNED: Get medical advice/attention.
- **Classification according to Directive 67/548/EEC:** T: Toxic. Repr.Cat.2: Reproductive toxins.
 - **R-Phrase:** R60 May impair fertility. R61 May cause harm to unborn child.
 - **S-Phrase:** S45 In case of accident or if you feel unwell, seek medical advice immediately. S53 Avoid exposure – obtain special instructions before use.
 - **Other hazards:** Absorbed through skin.



3. Information on Ingredients:

Description: Boric Acid

Contains	CAS No.	EC-No.	Index-No.	Content
Boric Acid	10043-35-3	233-139-2	005-007-00-2	< 2%

4. First Aid Measures:

- **Consult a physician** – Show this MSDS to the doctor in attendance.
- **If Inhaled:** Move person into fresh air. Consult a physician.
- **In case of skin contact:** Wash off with soap and plenty of water. Remove contaminated clothing. Consult a physician.
- **In case of eye contact:** Rinse thoroughly with plenty of water for 15 minutes. Remove contact lenses if easy to do so. Consult a physician.
- **If swallowed:** Rinse mouth with water. Consult a physician.
- **Most important symptoms and effects, both acute and delayed:**
Inhalation: Causes cough or sore throat.
Skin: May be absorbed through injured skin. Causes redness.

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Eyes: Causes eye redness or pain.

Ingestion: Causes abdominal pain, convulsions, diarrhea, nausea, vomiting, skin rash.

5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Use extinguishing media suitable for the surrounding area.
- **Hazards from the substance or mixture:** Not combustible. Gives off irritating or toxic fumes or gases in a fire.
- **Special precautions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures:

- **Person-related safety precautions:** Wear respiratory protection. Ensure adequate ventilation. Wear protective gloves and safety glasses. Do not eat, drink, or smoke in laboratory areas.
- **Measures for environmental protection:** Prevent further leakage or spillage if safe to do so. Do not let enter drains.
- **Measures for containment and cleaning:** Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations.

7. Handling and Storage:

- **Precautions for safe handling:** Obtain special instructions before use. Do not eat, drink, or smoke in laboratory areas.
- **Conditions for safe storage:** Store locked up.

8. Exposure Controls and Personal Protection:

- **Component: Boric Acid**
ACGIH – TLV: TWA, 2 mg/m³; STEL, 6 mg/m³. Not classifiable as a Human Carcinogen.
- **Appropriate engineering controls:** Prevent dispersion of dust. Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.
- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.
 - **Eye/face protection:** Wear approved safety goggles.
 - **Skin/hand protection:** Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
 - **Body protection:** Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.
 - **Respiratory protection:** In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator.

9. Physical and Chemical Properties:

- | | |
|---|---------------------------------|
| ▪ Appearance: Liquid | Upper/lower flammability |
| ▪ or explosive limits: Not available | |
| ▪ Odor: Not available | Vapor density : Not |
| available | |
| ▪ Odor threshold: Not available | Vapor pressure: Not |
| available | |
| ▪ pH: Not available | Relative density: Not |
| available | |

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Boiling point/Boiling

- **Melting point/freezing point:** Not available.
range: Not available
- **Partition coefficient: noctanol/water:** Not available
- **Flash point:** Not available
temperature: Not available
- **Water solubility:** Not available
- **Evaporation rate:** Not available
- **Flammability (solid, gas):** Not available

Auto igniting: Not available
Decomposition

Viscosity: Not available

10. Stability and Reactivity:

- **Reactivity:** No data available
- **Chemical Stability:** No data available
- **Possibility of hazardous reactions:** No data available
- **Conditions to avoid:** No data available
- **Incompatible materials:** Potassium, acid anhydrides.
- **Hazardous decomposition products:** No data available

11. Toxicological Information:

- **Acute toxicity:** LD50 Oral – rat – 2,660 mg/kg
- **Skin corrosion/irritation:** Causes redness.
- **Serious eye damage/irritation:** no data available
- **Respiratory or skin sensitization:** no data available
- **Germ cell mutagenicity:** no data available.
- **Carcinogenicity:** No classified as a carcinogen.
- **Reproductive toxicity:** Presumed human reproductive toxicant.
- **Specific target organ toxicity (STOT) -single exposure:** No data available
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available
- **Aspiration hazard:** No data available
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - Inhalation:** Causes cough and sore throat.
 - Ingestion:** Causes abdominal pain, convulsions, diarrhea, nausea, vomiting and skin rash.
 - Skin contact:** May be absorbed through injured skin. Causes redness.
 - Eye contact:** Causes redness and pain.
- **Delayed and immediate effects and also chronic effects from short and long term exposure: Short-Term Exposure:** Irritating to eyes, skin and respiratory tract. May cause effects on the gastrointestinal tract, liver and kidneys.
Long-Term Exposure: Prolonged exposure to skin may cause dermatitis. Possible cause of toxic effects upon human reproduction.

12. Ecological Information:

- **Ecotoxicity:** No data available.
 - **Biodegradability:** No data available.
- **Bioaccumulative potential:** No data available.
 - **Mobility in soil:** No data available.
 - **Other adverse effects:** No data available.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations. Contact a

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licensed professional waste disposal service to dispose of this material.

- **Contaminated packaging:** Dispose in the same manner as unused product.

14. Transport Information:

- **UN Number:** None
- **DOT regulations: Hazard class:** None
- **Land transport ADR/RID (cross-border):** Not regulated.
- **Maritime transport IMDG:** Not regulated.
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- **Transport/Additional information:** Not dangerous according to the above specifications.


15. Regulations:

- **US Federal and State Regulations**
 - TSCA (Toxic Substances Control Act):** Boric Acid is listed.
 - SARA 313:** None of the components are listed.
 - SARA 311/312 Hazards:** None of the components are listed
 - CERCLA Reportable Quantity:** None of the components are listed.
 - California Proposition 65:** None of the components are listed on California's listing of known or potential carcinogens.

16. Other Information:

- **R-Phrase:** R60 May impair fertility. R61 May cause harm to unborn child.
S-Phrase: S45 In case of accident or if you feel unwell, seek medical advice immediately. S53 Avoid exposure – obtain special instructions before use.
- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

2. Hazard Identification:

- **Classification: Regulation (EC) No. 1272/2008 [CLP/GHS]**
Some components indicated above contain ProClin 300: Skin Sens. 1; H317 – May cause an allergic skin reaction.
 - **Signal Word:** WARNING
 - **Precautionary statements:**
 - P261: Avoid breathing mist.
 - P272: Contaminated work clothing should not be allowed out of the workplace.
 - P280: Wear protective gloves.**Response:** IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: get medical attention. Wash contaminated clothing before reuse.
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- **Classification according to Directive 67/548/EEC:** The product is classified as a skin sensitizer according to Directive 1999/45/EC and its amendments.
 - **Hazard Symbol / R-Phrase / S-Phrase:** R43: May cause sensitization by skin contact.
 - **Other hazards:** none

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3. Information on Ingredients:

Description: ProClin 300

Contains	CAS No.	EC-No.	Index-No.	Content
Modified Alkyl Carboxylate	-	-	-	<0.01%
Mixture of 5-Chloro-2-Methyl-4-Isothiazolin-3-One (26172-55-4) and 2-Methyl-4-Isothiazolin-3-One (2682-20-4)	55965-84-9	-	613-167-00-5	<0.01%
Modified Glycol	-	-	-	≤1.6%

4. First Aid Measures:

- **IF IN EYES:** Rinse thoroughly with water for at least 15 minutes and immediately consult a physician.
- **IF ON SKIN (or hair):** Immediately take off contaminated clothing or shoes. Wash with plenty of soap and water. Consult a physician.
- **IF INHALED:** If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.
- **IF SWALLOWED:** Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Immediately consult a physician.

5. Fire Fighting Measures:

- **Suitable extinguishing agents:** Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
- **Special precautions for fire-fighters:** Self contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental Release Measures:

- **Person-related safety precautions:** Use appropriate personal protective equipment to prevent contamination of skin, eyes and personal clothing. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
- **Measures for environmental protection:** Keep away from drains.
- **Measures for containment and cleaning:** Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

7. Handling and Storage:

- **Precautions for safe handling:** Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use normal measures for preventive fire protection.
- **Conditions for safe storage:** Store in a cool, dry place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. Exposure Controls and Personal Protection:

- **Control parameters:** Contains no substances with occupational exposure limit values.

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- **Individual protection measures:** Wash hands thoroughly after handling chemical products and before eating, smoking or using the toilet. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing.

Eye/face protection: Wear approved safety goggles.

Skin/hand protection: Handle with protective gloves, plastic or rubber. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body protection: Wear suitable protective clothing as protection against splashing or contamination.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved.

Respiratory protection: In case of inadequate ventilation, use a suitable respirator. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

9. Physical and Chemical Properties:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Appearance: Clear Liquid available ▪ Odor: Not available ▪ Odor threshold: Not available ▪ pH: Not available ▪ Melting point/freezing point: -40° C ▪ Boiling point/Boiling range: 189° C ▪ Flash point: 118° C – closed cup ▪ Evaporation rate: Not available ▪ Flammability (solid, gas): Not available | <ul style="list-style-type: none"> ▪ Upper/lower flammability or explosive limits: Not available ▪ Vapor density : Not available ▪ Vapor pressure: Not available ▪ Relative density: 1.03 g/cm³ ▪ Solubility in/Miscibility with Water: Soluble ▪ Partition coefficient: noctanol/water: Not available ▪ Auto igniting: Not available ▪ Decomposition temperature: Not available ▪ Viscosity: Not available |
|--|--|

10. Stability and Reactivity:

- **Chemical Stability:** Stable under recommended storage conditions.
- **Conditions to avoid:** Strong oxidizing agents, reducing agents, Amines, Mercaptans
- **Hazardous decomposition products:** Hazardous decomposition products formed under fire conditions – Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas.

11. Toxicological Information:

- **Acute toxicity:** LD50 Oral – rat – 862 mg/kg
LD50 Dermal – rabbit- 2800 mg/kg
- **Skin corrosion/irritation:** Can cause severe burns. Skin – rabbit – Corrosive
- **Serious eye damage/irritation:** Rabbit – Corrosive to eyes
- **Respiratory or skin sensitization:** May cause allergic skin reaction.
- **Germ cell mutagenicity:** No data available
- **Carcinogenicity:** No data available
- **Reproductive toxicity:** No data available
- **Specific target organ toxicity (STOT) -single exposure:** No data available
- **Specific target organ toxicity (STOT) -repeated exposure:** No data available
- **Aspiration hazard:** Can cause severe burns.
- **Information on likely routes of exposure:** Routes of entry anticipated; oral, dermal, inhalation.
- **Symptoms related to the physical, chemical and toxicological characteristics:**
 - **Inhalation:** Harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
 - **Ingestion:** Harmful if swallowed. Causes burns.
 - **Skin contact:** Harmful if absorbed through skin. Causes burns.
 - **Eye contact:** Causes eye burns.

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- **Delayed and immediate effects and also chronic effects from short and long term exposure:**
Short term exposure: Potential immediate effects: Not available. **Potential delayed effects:** Not available.
Long term exposure: Potential immediate effects: Not available. **Potential delayed effects:** Allergic contact dermatitis.
- **Effects of chronic exposure:** ProClin 300 at levels greater than or equal to 0.1% is not identified as probable, possible or a confirmed human carcinogen by IARC.
- **Numerical measures of toxicity:** Not available
- **Other Information:** NA

12. Ecological Information:

- **Ecotoxicity:** No data available
- **Biodegradability:** No data available.
- **Bioaccumulative potential:** No data available.
- **Mobility in soil:** No data available.
- **Other adverse effects:** Toxic to aquatic organisms.

13. Disposal Considerations:

- **Disposal methods:** Dispose of waste in accordance to applicable national, regional, or local regulations.
- **Contaminated packaging:** Dispose in the same manner as unused product.
- **Special precautions:** Dispose of small amounts of spilled material as described in section 6. Large spills must be dealt with separately by qualified disposal personnel. Avoid dispersal of spilled material to soil, waterways, drains and sewers.

14. Transport Information:

- **UN Number:** None
- **DOT regulations: Hazard class:** None
- **Land transport ADR/RID (cross-border):** Not regulated.
- **Maritime transport IMDG:** Not regulated.
- **Marine pollutant:** No
- **Air transport ICAO-TI and IATA-DGR:** Not regulated.
- **Transport/Additional information:** Not dangerous according to the above specifications.

15. Regulations:

- **US Federal and State Regulations**
TSCA (Toxic Substances Control Act): On TSCA Inventory
SARA 313 Components: Not listed
SARA 311/312 Hazards: Acute Health Hazard
CERCLA Reportable Quantity: Not listed
California Proposition 65: Not listed.

16. Other Information:

- **Hazard Symbol / R-Phrase / S-Phrase:** R43 May cause sensitization by skin contact.
- **Notice to reader:** To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.