

## Safety Data Sheet (SDS)

OSHA HazCom Standard 29 CFR 1910.1200(g) and GHS Rev 03.

Issue date 05/26/2016

Reviewed on 05/26/2016

### 1 Identification

- **Product Identifier**
- **Trade name: RAD 5 Plus**
- **Relevant identified uses of the substance or mixture and uses advised against:**  
No further relevant information available.
- **Product Description** Aqueous Alkaline Solution
- **Details of the Supplier of the Safety Data Sheet:**
- **Manufacturer/Supplier:**  
Clayton Chemical  
2630 Homestead Pl.  
Rancho Dominguez, CA 90220  
Telephone: (310) 538 9530
- **Emergency telephone number:**  
Medical Emergency Telephone : CHEMTREC® 1 (800) 424 9300  
Transportation Emergency Telephone : CHEMTREC® 1 (800) 424 9300

### 2 Hazard(s) Identification

- **Classification of the substance or mixture:**



GHS08 Health hazard

Muta. 2 H341 Suspected of causing genetic defects.



GHS07

Eye Irrit. 2A H319 Causes serious eye irritation.

Skin Sens. 1 H317 May cause an allergic skin reaction.

- **Label elements:**
- **GHS label elements**  
The product is classified and labeled according to the Globally Harmonized System (GHS).
- **Hazard pictograms:**



GHS07



GHS08

- **Signal word:** Warning
- **Hazard-determining components of labeling:**  
Hydroquinone
- **Hazard statements:**  
H319 Causes serious eye irritation.  
H317 May cause an allergic skin reaction.  
H341 Suspected of causing genetic defects.
- **Precautionary statements:**  
P261 Avoid breathing dust/fume/gas/mist/vapors/spray.  
P280 Wear protective gloves.  
P280 Wear eye protection / face protection.  
P264 Wash thoroughly after handling.

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- P272 Contaminated work clothing must not be allowed out of the workplace.  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
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 supplementary first aid instructions on this Safety Data Sheet).  
P363 Wash contaminated clothing before reuse.  
P308+P313 IF exposed or concerned: Get medical advice/attention.  
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.  
P337+P313 If eye irritation persists: Get medical advice/attention.  
P302+P352 IF ON SKIN: Wash with plenty of water.  
P405 Store locked up.  
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Unknown acute toxicity:**

12.3 % of the mixture consists of component(s) of unknown toxicity.

· **Classification system:**

· **NFPA ratings (scale 0 - 4)**



· **HMS-ratings (scale 0 - 4)**



· **Hazard(s) not otherwise classified (HNOC):** None known

### \* 3 Composition/Information on Ingredients

· **Non-hazardous components:**

10117-38-1	potassium sulfite	5-10%
7757-83-7	Sodium sulfite	5-10%
7732-18-5	Water, distilled water, deionized water	70-90%

· **Chemical characterization: Mixtures**

· **Description:** Mixture of substances listed below with non-hazardous additions.

· **Dangerous Components:**

CAS: 123-31-9 RTECS: MX 3500000	Hydroquinone ⚠ Muta. 2, H341; ⚠ Eye Dam. 1, H318; ⚠ Aquatic Acute 1, H400; ⚠ Acute Tox. 4, H302; Skin Sens. 1, H317	≤ 2.5%
CAS: 584-08-7 RTECS: TS 7750000	Potassium Carbonate ⚠ Acute Tox. 4, H302	≤ 2.5%
CAS: 139-89-9	trisodium 2-(carboxylatomethyl(2-hydroxyethyl)amino)ethyliminodi(acetate) ⚠ Eye Irrit. 2A, H319	≤ 2.5%

· **Additional information:**

The exact percentages of the ingredients of this mixture are considered to be proprietary and are withheld in accordance with the provisions of paragraph (i) of §1910.1200 of 29 CFR 1910.1200 Trade Secrets.

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### 4 First-Aid Measures

- **Description of first aid measures:**
- **General information:**  
Symptoms of poisoning may occur after exposure to dust, fumes or particulates; seek medical attention if feeling unwell.
- **After inhalation:** Supply fresh air; consult doctor in case of complaints.
- **After skin contact:**  
Immediately wash skin with soap and plenty of water for at least 15 minutes.  
Remove contaminated clothing and wash before reuse.  
Get medical attention if symptoms occur.
- **After eye contact:**  
Rinse opened eye for at least 15 minutes under running water. If symptoms persist, consult a doctor.
- **After swallowing:** Drink milk or water. Do not induce vomiting. Obtain immediate medical attention.
- **Information for 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.

### 5 Fire-Fighting Measures

- **Extinguishing media:**
- **Suitable extinguishing agents:**  
CO<sub>2</sub>, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
- **Special hazards arising from the substance or mixture:**  
When heated to decomposition, emission of toxic fumes are possible.
- **Advice for firefighters:**
- **Protective equipment:**  
As in any fire, wear self-contained breathing apparatus pressure-demand (NIOSH approved or equivalent) and full protective gear to prevent contact with skin and eyes.
- **Additional information:** Evacuate personnel to a safe area. Keep personnel away from and upwind of fire.

### 6 Accidental Release Measures

- **Personal precautions, protective equipment and emergency procedures:**  
Wear protective equipment. Keep unprotected persons away.
- **Environmental precautions:**  
Inform respective authorities in case of seepage into water course or sewage system.  
Do not allow to enter sewers/surface or ground water.
- **Methods and material for containment and cleaning up:**  
Ensure adequate ventilation.  
Absorb with liquid-binding material (i.e. sand, diatomite, acid binders, universal binders, sawdust).  
Dispose contaminated material as waste according to section 13.
- **Reference to other sections:**  
See Section 7 for information on safe handling.  
See Section 8 for information on personal protection equipment.  
See Section 13 for disposal information.

### 7 Handling and Storage

- **Handling**
- **Precautions for safe handling:**  
Avoid contact with skin, eyes and clothing  
Ensure good ventilation/exhaustion at the workplace.

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- **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:**  
Store in a cool, dry place.  
Store in a well ventilated place.
- **Information about storage in one common storage facility:** See Section 10 (Incompatible materials)
- **Further information about storage conditions:** Keep receptacle tightly sealed.
- **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 section 7.
- **Control parameters:**
- **Components with occupational exposure limits:**  
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.  
At this time, the other constituents have no known exposure limits.

#### 123-31-9 Hydroquinone

PEL	Long-term value: 2 mg/m <sup>3</sup>
REL	Ceiling limit value: 2* mg/m <sup>3</sup> *15-min
TLV	Long-term value: 1 mg/m <sup>3</sup> DSEN

- **Additional information:** The lists that were valid during the creation of this SDS were used as basis.
- **Exposure controls:**  
Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS. Where acceptable concentrations cannot be maintained by general mechanical ventilation, local exhaust ventilation is recommended.
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing and wash before reuse.  
Wash hands before breaks and at the end of work.
- **Breathing equipment:**



NIOSH/OSHA or EN approved respiratory protection is recommended for use in airborne concentrations exceeding exposure limits.

- **Protection of hands:**



Protective gloves

- **Material of gloves:** Not required.
- **Penetration time of glove material:** Not applicable.

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· **Eye protection:**



Goggles recommended during refilling.

· **Body protection:**



Apron

### 9 Physical and Chemical Properties

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

· **General Information**

· **Appearance:**

<b>Form:</b>	Liquid
<b>Color:</b>	Clear light yellow
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	Not determined.

<b>pH-value @ 20 °C (68 °F):</b>	11.2
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· **Change in condition**

<b>Melting point/Melting range:</b>	Not determined.
<b>Boiling point/Boiling range:</b>	100 °C (212 °F)

<b>Flash point:</b>	None
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<b>Flammability (solid, gaseous):</b>	Not applicable.
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· **Ignition temperature:**

<b>Decomposition temperature:</b>	Not determined.
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<b>Auto igniting:</b>	Product is not self-igniting.
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<b>Danger of explosion:</b>	Product does not present an explosion hazard.
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· **Explosion limits:**

<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.

<b>Vapor pressure:</b>	Not determined.
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<b>Density @ 20 °C (68 °F):</b>	1.269 g/cm <sup>3</sup> (10.59 lbs/gal)
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<b>Relative density:</b>	Not determined.
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<b>Vapor density:</b>	Not determined.
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<b>Evaporation rate:</b>	Not determined.
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· **Solubility in / Miscibility with:**

<b>Water:</b>	Soluble.
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<b>Partition coefficient (n-octanol/water):</b>	Not determined.
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· **Viscosity:**

<b>Dynamic:</b>	Not determined.
<b>Kinematic:</b>	Not determined.

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- **Solvent content:**
  - Organic solvents:** 0.1 %
  - Water:** 0.3 %
  - VOC content:** 0.1 %
- **Solids content:** 26.6 %
- **Other information:** No further relevant information available.

### 10 Stability and Reactivity

- **Reactivity:** No further relevant information available.
- **Chemical stability:** Stable under normal conditions.
- **Thermal decomposition / conditions to be avoided:**  
When heated to decomposition, emission of toxic fumes are possible.
- **Possibility of hazardous reactions:** No dangerous reactions known.
- **Conditions to avoid:** No further relevant information available.
- **Incompatible materials:** Strong acids, oxidizers.
- **Hazardous decomposition products:** With strong acids, sulfur dioxide gas.

### 11 Toxicological Information

- **Information on toxicological effects:**
- **Acute toxicity:**

- **LD/LC50 values that are relevant for classification:**

#### 123-31-9 Hydroquinone

Oral LD50 320 mg/kg (rat)

#### 584-08-7 Potassium Carbonate

Oral LD50 1870 mg/kg (rat)

- **Primary irritant effect:**
- **On the skin:**  
Caustic effect on skin and mucous membranes.  
May cause an allergic skin reaction.
- **On the eye:** Irritating effect.
- **Sensitization:** Sensitization possible through skin contact.
- **Additional toxicological information:**

The product shows the following dangers according to internally approved calculation methods for preparations:  
Irritant

- **Carcinogenic categories:**

- **IARC (International Agency for Research on Cancer):**

123-31-9 Hydroquinone

3

111-42-2 Diethanolamine

2B

- **NTP (National Toxicology Program):**

None of the ingredients are listed.

- **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

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### 12 Ecological Information

- **Toxicity:**
- **Aquatic toxicity:**  
Avoid release into the environment. Runoff from fire control or dilution water may cause pollution.
- **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.
- **Ecotoxicological effects:**
- **Remark:** Very toxic for fish
- **Additional ecological information:**
- **General notes:**  
Do not allow product to reach ground water, water course or sewage system, even in small quantities.
- **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:**  
Observe all federal, state and local environmental regulations when disposing of this material.  
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.
- **Recommended cleansing agent:** Water, if necessary with cleansing agents.

### 14 Transport Information

- **UN-Number:**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **UN proper shipping name:**
- **DOT, ADR, ADN, IMDG, IATA** Non-Regulated Material
- **Transport hazard class(es):**
- **DOT, ADR, ADN, IMDG, IATA**
- **Class:** Non-Regulated Material
- **Packing group:**
- **DOT, ADR, IMDG, IATA** Non-Regulated Material
- **Environmental hazards:** Not applicable.
- **Special precautions for user:** Not applicable.
- **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:** Not applicable.
- **UN "Model Regulation":** Non-Regulated Material

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### 15 Regulatory Information

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

· **SARA (Superfund Amendments and Reauthorization):**

· **Section 355 (extremely hazardous substances):**

123-31-9	Hydroquinone
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· **Section 313 (Specific toxic chemical listings):**

123-31-9	Hydroquinone
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111-42-2	Diethanolamine
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· **TSCA (Toxic Substances Control Act):**

All ingredients are listed or exempt from listing.

· **California Proposition 65:**

· **Chemicals known to cause cancer:**

111-42-2	Diethanolamine
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· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **New Jersey Right-to-Know List:**

123-31-9	Hydroquinone
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111-42-2	Diethanolamine
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· **New Jersey Special Hazardous Substance List:**

111-42-2	Diethanolamine	CO
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· **Pennsylvania Right-to-Know List:**

123-31-9	Hydroquinone
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111-42-2	Diethanolamine
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· **Pennsylvania Special Hazardous Substance List:**

123-31-9	Hydroquinone	E
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111-42-2	Diethanolamine	E
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· **Carcinogenic categories:**

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

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

123-31-9	Hydroquinone	A3
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111-42-2	Diethanolamine	A3
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· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

None of the ingredients are listed.

· **GHS label elements**

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

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· **Hazard pictograms:**



GHS07 GHS08

· **Signal word:** Warning

· **Hazard-determining components of labeling:**

Hydroquinone

· **Hazard statements:**

H319 Causes serious eye irritation.

H317 May cause an allergic skin reaction.

H341 Suspected of causing genetic defects.

· **Precautionary statements:**

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P280 Wear protective gloves.

P280 Wear eye protection / face protection.

P264 Wash thoroughly after handling.

P272 Contaminated work clothing must not be allowed out of the workplace.

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

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 supplementary first aid instructions on this Safety Data Sheet).

P363 Wash contaminated clothing before reuse.

P308+P313 IF exposed or concerned: Get medical advice/attention.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P302+P352 IF ON SKIN: Wash with plenty of water.

P405 Store locked up.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

· **National regulations:**

The product is subject to be classified according with the latest version of the regulations on hazardous substances.

· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

### 16 Other Information

The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create warranty, expressed or implied, and shall not establish a legally valid contractual relationship. It is the responsibility of the user to determine applicability of this information and the suitability of the material or product for any particular purpose.

· **Date of preparation / last revision:** 05/26/2016 / 6

· **Abbreviations and acronyms:**

ADR: The European Agreement concerning the International Carriage of Dangerous Goods by Road

ADN: The European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

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

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CAS: Chemical Abstracts Service (division of the American Chemical Society)

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

VOC: Volatile Organic Compounds (USA, EU)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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

Acute Tox. 4: Acute toxicity – Category 4

Eye Dam. 1: Serious eye damage/eye irritation – Category 1

Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A

Skin Sens. 1: Skin sensitisation – Category 1

Muta. 2: Germ cell mutagenicity – Category 2

Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

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

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