

# Safety Data Sheet

Product identifier used on the label: BD RAD FLSH&OILDEGR 6/32

Product Code: BDH00203

Revision Date: 10-07-2023

Replaces: 09-07-2023

## 1. Identification

Product identifier used on the label: **BD RAD FLSH&OILDEGR 6/32**

Product Code: BDH00203

Other means of identification: BDEV0020300203

Other means of identification:

Synonyms: No data available

Recommended use of the chemical and restrictions on use:

Recommended use: Radiator Flush

Restrictions on use: Uses other than those described above

Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party: Highline Warren LLC  
4500 Malone Road  
Memphis, TN 38118

Phone number: +1-888-863-0426 Hours: M-F 8AM-5PM EST

E-mail address: sds@highlinewarren.com

Emergency phone number: CHEMTREC: +1 (800) 424-9300 International: +01 (703) 527-3887

## 2. Hazard(s) identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200:

GHS Hazard Symbols:



GHS Classification: Serious Eye Damage/Eye Irritation Category 2A

Signal Word: Warning

Hazard Statements: Causes serious eye irritation

Precautionary Statements:

Prevention: Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

Response: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

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Hazards not otherwise classified: No data available

## 3. Composition/information on ingredients

Chemical Name	Common name and synonyms	CAS #	%
Sodium citrate	No data available	6132-04-3	5 - 10
2-Methyl-2,4-pentanediol	No data available	107-41-5	0.5 - 1

## 4. First-aid measures

Description of necessary measures, subdivided according to the different routes of exposure, i.e., inhalation, skin and eye contact, and ingestion:

<b>Inhalation:</b>	This material does not present a hazard if inhaled. Remove individual to fresh air after an airborne exposure if any symptoms develop, as a precautionary measure.
<b>Eye Contact:</b>	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
<b>Skin Contact:</b>	Wash with soap and water. Get medical attention if irritation develops or persists.
<b>Ingestion:</b>	Minimal risk of harm if swallowed. Do not induce vomiting. Seek medical attention immediately. Provide medical care provider with this SDS.

**Most important symptoms/effects, acute and delayed:** Causes serious eye irritation

**Indication of immediate medical attention and special treatment needed, if necessary:** Treat symptomatically.

## 5. Fire-fighting measures

**Suitable (and unsuitable) extinguishing media:**

**Suitable extinguishing media:** Use alcohol resistant foam, carbon dioxide, or dry chemical when fighting fires. Water or foam may cause frothing if liquid is burning but it still may be a useful extinguishing agent if carefully applied to the surface of the fire. Do not direct a stream of water into the hot burning liquid.

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<b>Unsuitable extinguishing media:</b>	No data available
<b>Specific hazards arising from the chemical:</b>	Material may be ignited only if preheated to temperatures above the high flash point, for example in a fire.
<b>Hazardous combustion products:</b>	Carbon dioxide, Carbon monoxide, Toxic fumes., Toxic gases, Nitrogen oxides
<b>Special protective equipment and precautions for fire-fighters:</b>	Do not enter fire area without proper protection including self-contained breathing apparatus and full protective equipment. Use methods for the surrounding fire.

## 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures:</b>	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this SDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred. Also consider the expertise of employees in the area responding to the spill.
<b>Methods and materials for containment and cleaning up:</b>	No special spill clean up considerations. Collect and discard in regular trash.

## 7. Handling and storage

<b>Precautions for safe handling:</b>	Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area. Empty containers may retain product residues/ vapors. Use proper bonding and grounding during bulk product transfer. Follow all protective equipment recommendations provided in Section 8.
<b>Conditions for safe storage, including any incompatibilities:</b>	
<b>Safe storage conditions:</b>	Store in a cool dry place. Isolate from incompatible materials.
<b>Materials to Avoid/Chemical Incompatibility:</b>	Strong oxidizing agents, Acetic anhydride, Strong acids, Strong reducing agents, Chlorinated compounds

## 8. Exposure controls/personal protection

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OSHA permissible exposure limit (PEL), American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV), and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet, where available:

Chemical component	OSHA PEL	ACGIH TLV	ACGIH STEL	IDLH	US WEEL
2-Methyl-2,4-pentanediol	No PEL	25 ppm TWA (vapor fraction)	50 ppm STEL (vapor fraction); 10 mg/m3 STEL (inhalable particulate matter, aerosol only)	No data available	No data available

**Appropriate engineering controls:** No engineering controls are likely to be required to maintain operator comfort under normal conditions of use.

**Individual protection measures, such as personal protective equipment:**

**Respiratory Protection:** No respiratory protection required under normal conditions of use. Follow a respiratory protection program that meets 29 CFR 1910.134 and ANSI Z88.2 requirements whenever work place conditions warrant the use of a respirator. Wear a NIOSH approved respirator if any exposure is possible.

**Respirator Type(s):** None required where adequate ventilation is provided. If airborne concentrations are above the applicable exposure limits, use NIOSH/MSHA approved respiratory protection.

**Eye protection:** Wear chemically resistant safety glasses with side shields when handling this product. Do not wear contact lenses.

**Skin protection:** Where use can result in skin contact, practice good personal hygiene and wear impervious gloves. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

**Gloves:** Wear appropriate protective gloves to prevent skin exposure.

**General hygiene conditions:** Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.

## 9. Physical and chemical properties

**Appearance (physical state, color etc.):**

**Physical state:** Liquid

**Color:** Colorless

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<b>Odor:</b>	None
<b>Odor Threshold:</b>	Not determined
<b>pH:</b>	No data available
<b>Melting point/freezing point:</b>	
<b>Melting Point:</b>	No data available
<b>Freezing point:</b>	No data available
<b>Initial boiling point and boiling range (°C):</b>	101
<b>Flash Point (°C):</b>	94
<b>Evaporation Rate:</b>	No data available
<b>Flammability (solid, gas):</b>	No data available
<b>Upper/lower flammability or explosive limits:</b>	
<b>Upper flammability or explosive limits:</b>	Not established
<b>Lower flammability or explosive limits:</b>	Not established
<b>Vapor pressure:</b>	No data available
<b>Vapor density:</b>	No data available
<b>Relative density:</b>	1.07
<b>Solubility(ies):</b>	Not determined
<b>Partition coefficient: n-octanol/water:</b>	0.14
<b>Auto-ignition temperature:</b>	No data available
<b>Decomposition Temperature:</b>	Not determined
<b>Viscosity:</b>	No data available

## 10. Stability and reactivity

<b>Reactivity:</b>	There are no known reactivity hazards associated with this product.
<b>Chemical stability:</b>	Stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	None expected under standard conditions of storage.
<b>Conditions to avoid (e.g., static discharge, shock, or vibration):</b>	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Elevated temperatures Contamination.
<b>Incompatible materials:</b>	Strong oxidizing agents, Acetic anhydride, Strong acids, Strong reducing

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agents, Chlorinated compounds

**Hazardous decomposition products:** Nitrogen oxides, Toxic gases, Toxic fumes., Carbon monoxide, Carbon dioxide

## 11. Toxicological information

**Description of the various toxicological (health) effects and the available data used to identify those effects:**

**Information on the likely routes of exposure (inhalation, ingestion, skin and eye contact):** Eye Contact

**Symptoms related to the physical, chemical and toxicological characteristics:** Causes serious eye irritation

**Delayed and immediate effects and also chronic effects from short- and long-term exposure:**

**Ingestion:** No hazard in normal industrial use. Estimated to be > 5.0 g/kg.

**Skin Contact:** This material is likely to be slightly irritating to skin based on animal data. Can cause minor skin irritation, defatting, and dermatitis.

**Inhalation:** No hazard in normal industrial use. Likely to be practically non-toxic based on animal data.

**Eye Contact:** Causes serious eye irritation

**Sensitization:** Non-hazardous under Respiratory Sensitization category.

**Mutagenicity:** No data available to indicate product or any components present at greater than 0.1% is mutagenic or genotoxic.

**Carcinogenicity:** Contains a substance that is a possible cancer hazard based on high dose animal studies and/or a human study.

**Reproductive toxicity** Not known or reported to cause reproductive or developmental toxicity.

**STOT-single exposure:** Based on available data, the classification criteria are not met.

**STOT-repeated exposure:** Based on available data, the classification criteria are not met.

**Aspiration hazard:** Based on available data, the classification criteria are not met.

**Other information:** None known.

**Numerical measures of toxicity (such as acute toxicity estimates)** Based on available data, the classification criteria are not met.

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Is the hazardous chemical is listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or has been found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition), or by OSHA:

Chemical Name	OSHA Carcinogen	IARC Carcinogen	NTP Carcinogen
There are no components that are known or reported to cause cancer.			

## 12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

This material is not expected to be harmful to the ecology.

Ecological Toxicity Data:

Chemical Name	CAS #	Aquatic EC50 Crustacea	Aquatic ERC50 Algae	Aquatic LC50 Fish
2-Methyl-2,4-pentanediol	107-41-5	EC50 (48h) Daphnia magna 2700 - 3700 mg/L	No data available	LC50 (96h) Pimephales promelas (Fathead Minnow) 10700 mg/L LC50 (96h) Pimephales promelas (Fathead Minnow) 8690 mg/L LC50 (96h) Lepomis macrochirus (Bluegill) 10000 mg/L LC50 (96h) Pimephales promelas (Fathead Minnow) 10500 - 11000 mg/L

Persistence and degradability:

Biodegrades at a moderate rate.

Bioaccumulative potential:

Bioconcentration is not expected to occur.

Mobility in soil:

This material is expected to have moderate mobility in soil. It absorbs to most soil types.

Other adverse effects (such as

None known.

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hazardous to the ozone layer):

## 13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:

Spent or discarded material is not expected to be a hazardous waste.

Contaminated packaging:

Empty containers may contain residues. Dispose of in the same way as waste product.

## 14. Transport information

Carriage of dangerous goods by road (DOT), rail or inland waterways:

DOT Basic Description: Not regulated by the US D.O.T.

International carriage of dangerous goods by sea (IMDG/IMO):

UN number: Not regulated by IMDG

UN Proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group, if applicable: Not applicable

International carriage of dangerous goods by air (IATA):

UN number: Not regulated by IATA

UN Proper shipping name: Not applicable

Transport hazard class(es): Not applicable

Packing group, if applicable: Not applicable

Environmental hazards (e.g., Marine pollutant (Yes/No)): None.

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): No data available

Special precautions which a user needs to be aware of or needs to comply with in connection with transport or



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conveyance either within or outside  
their premises:

## 15. Regulatory information

Safety, health and environmental regulations specific for the product in question:

**TSCA Status:** All components of this material are on the Active US TSCA Inventory or are exempt.

Regulated Components:

Chemical Name	CAS #	CERCLA	Sara EHS	Sara 313	U.S. HAP
Sodium citrate	6132-04-3	N	N	N	N
2-Methyl-2,4-pentanediol	107-41-5	N	N	N	N

Chemical Name	CAS #	California Prop 65 - Cancer	California Prop 65 - Dev. Toxicity	California Prop 65 - Reprod fem	California Prop 65 - Reprod male
Sodium citrate	6132-04-3	N	N	N	N
2-Methyl-2,4-pentanediol	107-41-5	N	N	N	N

### California Prop 65

No ingredient(s) requiring a warning under California Prop 65.

Chemical Name	CAS #	Massachusetts RTK List	New Jersey RTK List	Pennsylvania RTK List	Rhode Island RTK List	Minnesota Hazardous Substance List
Sodium citrate	6132-04-3	N	N	N	N	N
2-Methyl-2,4-pentanediol	107-41-5	Y	Y	Y	N	Y

## 16. Other information, including date of preparation or last revision.

**SDS Prepared by:** EHUGHES  
**Revision Date:** 10-07-2023  
**Revision Number:** 5  
**Reason for revision:** Activated by Document Formulation Generation

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**References:**

No data available

**Other Info:**

No data available

**Disclaimer:**

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