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Revision Number 1.2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier

Product Name GA#-HP3

Other means of identification

Product Code(s) 11324596

UN/ID no. UN1824

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use reagent

Details of the supplier of the safety data sheet

Manufacturer Address

Verogen, Inc.
11111 Flintkote Avenue
San Diego, CA 92121 USA
www.verogen.com

Company Phone Number

1.833.837.6436
1.858.285.4101

E-mail address

info@verogen.com

Emergency telephone number

24 Hour Emergency Phone Number 1.858.285.4101

2. HAZARDS IDENTIFICATION

GHS Classification

OSHA Regulatory Status

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

Skin corrosion/irritation	Category 1
Serious eye damage/eye irritation	Category 1

Label elements

Emergency Overview

Signal word

Danger

Hazard statements

Causes severe skin burns and eye damage



Appearance colorless liquid	Physical state Liquid	Odor Odorless
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Precautionary Statements - Prevention

Do not breathe dust/fume/gas/mist/vapors/spray
 Wash face, hands and any exposed skin thoroughly after handling
 Wear protective gloves/protective clothing/eye protection/face protection

Precautionary Statements - Response

Immediately call a POISON CENTER or doctor/physician

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician

IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
 Wash contaminated clothing before reuse

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 Immediately call a POISON CENTER or doctor/physician

IF SWALLOWED: Rinse mouth. DO NOT induce vomiting

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of in accordance with federal, state and local regulations

Hazards not otherwise classified (HNOC)

Not applicable

Other Information

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

3. COMPOSITION/INFORMATION ON INGREDIENTS

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Chemical name	CAS No.	Weight-%	Trade Secret
Sodium hydroxide	1310-73-2	5 - 10	*

*The exact percentage (concentration) of composition has been withheld as a trade secret.

4. FIRST AID MEASURES**Description of first aid measures**

General advice	Use first aid treatment according to the nature of the injury.
Eye contact	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. Immediate medical attention is required.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Immediate medical attention is required.
Inhalation	If symptomatic, move to fresh air. Get medical attention if symptoms persist.
Ingestion	Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Clean mouth with water and drink afterwards plenty of water. Immediate medical attention is

required.

Self-protection of the first aider Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

Most important symptoms and effects, both acute and delayed

Symptoms Causes severe skin burns and eye damage. Redness. blistering.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media

Water, Water spray (fog), Foam, Dry chemical, Carbon dioxide (CO2)

Unsuitable extinguishing media

None known.

Specific hazards arising from the chemical

None known.

Hazardous combustion products

Carbon oxides.

Explosion data

Sensitivity to Mechanical Impact None.

Sensitivity to Static Discharge None.

Protective equipment and precautions for firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment as required.

For emergency responders Use personal protection recommended in Section 8. Keep unnecessary personnel away.

Environmental precautions

Environmental precautions Avoid discharge into drains, water courses, or onto the ground.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up Use personal protective equipment as required. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Large spill. Prevent runoff from entering drains, sewers, or streams. Dike far ahead of liquid spill for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Avoid contact with skin, eyes or clothing. Avoid breathing vapors or mists. Do not taste or swallow. Ensure adequate ventilation, especially in confined areas. Wash thoroughly after handling. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Keep/store only in original container. Store away from incompatible materials.

Incompatible materials Strong oxidizing agents. Acids.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide 1310-73-2	Ceiling: 2 mg/m ³	TWA: 2 mg/m ³ (vacated) Ceiling: 2 mg/m ³	IDLH: 10 mg/m ³ Ceiling: 2 mg/m ³

NIOSH IDLH Immediately Dangerous to Life or Health

Other Information Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin and body protection Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information.

Respiratory protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations Handle in accordance with good industrial hygiene and safety practice. Wash after handling this material and before eating, drinking and/or smoking. Regular cleaning of equipment, work area and clothing is recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical state Liquid
Appearance colorless liquid
Odor Odorless
Color colorless

Property	Values	Remarks • Method
pH	Alkaline	
Melting point / freezing point °F - VALUE 1	No data available	
Boiling point / boiling range		
Flash point		

Evaporation rate - VALUE	No data available
Flammability (solid, gas)	No data available
Flammability Limit in Air	
Upper flammability limit:	No data available
Lower flammability limit:	No data available
Vapor pressure	No data available
Vapor density	No data available
Specific gravity - VALUE 1	No data available
Water solubility	No data available
Solubility in other solvents	No data available
Partition coefficient	No data available
Autoignition temperature °C - VALUE	No data available
Decomposition temperature	No data available
Kinematic viscosity - VALUE 1	No data available
Dynamic viscosity - VALUE 1	No data available
Explosive properties	No unusual fire or explosion hazards noted.
Oxidizing properties	No data available

Other Information

Softening point	No data available
Molecular weight	No data available
VOC Content (%)	No data available
Liquid Density	No data available
Bulk density	No data available

10. STABILITY AND REACTIVITY

Reactivity

The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability

Stable under normal conditions. Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Hazardous polymerization

Hazardous polymerization does not occur.

Conditions to avoid

None known.

Incompatible materials

Strong oxidizing agents. Acids.

Hazardous decomposition products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure**Product Information**

Inhalation	May cause irritation of respiratory tract.
Eye contact	Causes serious eye damage.
Skin Contact	Causes burns.

Ingestion

Ingestion may cause irritation to mucous membranes.

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
Sodium hydroxide 1310-73-2	-	= 1350 mg/kg (Rabbit)	-

Information on toxicological effects

Symptoms Causes severe skin burns and eye damage. Redness, blistering.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Causes severe burns.
Serious eye damage/eye irritation Risk of serious damage to eyes.
Irritation May cause irritation of respiratory tract.
Corrosivity Corrosive to living tissue.
Sensitization Not classified.
Germ cell mutagenicity Not classified.
Carcinogenicity This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP.

Reproductive toxicity Not classified.
STOT - single exposure Not classified.
STOT - repeated exposure Not classified.
Target organ effects Eyes, Respiratory system, Skin.
Aspiration hazard Not classified.
Other adverse effects No information available.

Numerical measures of toxicity - Product Information

Unknown acute toxicity 0 % of the mixture consists of ingredient(s) of unknown toxicity

12. ECOLOGICAL INFORMATION

Ecotoxicity

0 % of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical name	Algae/aquatic plants	Fish	Crustacea
Sodium hydroxide 1310-73-2	-	45.4 mg/L: LC50 96 h Oncorhynchus mykiss static	-

Persistence and degradability
 Not a PBT or vPvB substance or mixture.

Bioaccumulation
 No data available

Mobility
 No data available.

Other adverse effects
 No data available

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of wastes Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated packaging Do not reuse container. Disposal should be in accordance with applicable regional, national and local laws and regulations.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical name	California Hazardous Waste Status
Sodium hydroxide 1310-73-2	Toxic Corrosive

14. TRANSPORT INFORMATION

DOT

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III
Reportable Quantity (RQ) Sodium hydroxide: RQ kg= 454.00
Special Provisions IB3, N34, T4, TP1
Description UN1824, Sodium hydroxide solution, 8, III, RQ
Emergency Response Guide Number 154

TDG

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III
Description UN1824, Sodium hydroxide solution, 8, III

MEX

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III
Description UN1824, Sodium hydroxide solution, 8, III

ICAO (air)

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III
Special Provisions A3
Description UN1824, Sodium hydroxide solution, 8, III

IATA

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III
ERG Code 8L
Special Provisions A3, A803
Description UN1824, Sodium hydroxide solution, 8, III

IMDG

UN/ID no. UN1824
Proper shipping name Sodium hydroxide solution
Hazard Class 8
Packing Group III

EmS-No	F-A, S-B
Special Provisions	223
Description	UN1824, Sodium hydroxide solution, 8, III

RID

UN/ID no.	UN1824
Proper shipping name	Sodium hydroxide solution
Hazard Class	8
Packing Group	III
Classification code	C5
Description	UN1824, Sodium hydroxide solution, 8, III
Labels	8

ADR

UN/ID no.	UN1824
Proper shipping name	Sodium hydroxide solution
Hazard Class	8
Packing Group	III
Classification code	C5
Tunnel restriction code	(E)
Description	UN1824, Sodium hydroxide solution, 8, III, (E)
Labels	8

ADN

UN Number	UN1824
Proper shipping name	Sodium hydroxide solution
Hazard Class	8
Packing Group	III
Classification code	C5
Description	UN1824, Sodium hydroxide solution, 8, III
Hazard label(s)	8
Limited quantity (LQ)	5 L

15. REGULATORY INFORMATION

International Inventories

TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	Does not comply
IECSC	Complies
KECL	Complies
PICCS	Complies
AICS	Complies

Legend:

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

US Federal Regulations**SARA 313**

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

SARA 311/312 Hazard Categories

Acute health hazard	Yes
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Chronic Health Hazard No
 Fire hazard No
 Sudden release of pressure hazard No
 Reactive Hazard No

CWA (Clean Water Act)

This product contains the following substances which are regulated 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
Sodium hydroxide 1310-73-2	1000 lb	-	-	X

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Sodium hydroxide 1310-73-2	1000 lb	-	RQ 1000 lb final RQ RQ 454 kg final RQ

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
Water 7732-18-5	-	-	X
Sodium hydroxide 1310-73-2	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION

NFPA Health hazards 3 Flammability 1 Instability 0 Physical and Chemical Properties -
HMIS Health hazards 3 Flammability 1 Physical hazards 0 Personal protection X

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Revision Note
 Not applicable.

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End of Safety Data Sheet