City of Keene
350 Marlboro Street New Hampshire 03431-4373

Ms Shauna Little
Environmental Protection Agency
RGP NOI Processing
5 Post Office Square, Suite 100
Mail Code OEP06-1
Boston, MA 02109-3912

August 2, 2018

Re: Permit Number NHG910073 – Emergency Discharge
Notice of Intent
NPDES Remediation General Permit
Drinking water storage tank discharge

Ms Little,

Enclosed please find the City's Notice of Intent and back up documents detailing the request for the emergency discharge of the contents of Keene's 1.5 million gallon finished drinking water storage tank that was contaminated by the presence of snakes in the tank and the water.

No samples of the receiving stream were collected by staff before the discharge began but samples at a point upstream of the discharge point could be collected in the future as required.

The flow rate was controlled through the tank's discharge valve. No flow meter could be installed, but the flow was calculated using the City's SCADA system online recording of tank levels.

The City of Keene owns and operates the storm drain system used for this discharge. The Public Works Department is responsible for the operations of the storm drain system, the water distribution and treatment systems, and discharges under its NPDES permits. Through the Public Works Director and the City Manager, the City has been notified and approves of this discharge. A copy of the final NOI is filed with the Public Works Department.

This application was prepared using the best information available from City staff. If you have questions about this document, please contact me at 603-352-6550.

Donna Hanscom
Assistant Public Works Director

City of Keene Remedial General Permit Notice of Intent

List of attachments:

Attachment A	General Narrative
Attachment B	Site Map
Attachment C	EAI analytical results
Attachment D	Chemical information
Attachment E	Endangered species information
Attachment F	Historical places information
Attachment G	BMPP certification

Attachment A: General Narrative

Snakes were discovered in the City's 1.5 million gallon finished drinking water storage tank on July 18, 2018 and the New Hampshire Department of Environmental Services required the City to empty and clean the tank before putting it back in service as part of the City's drinking water distribution system.

Discharge of the contaminated water to the sewer was not feasible because no access point was available near the tank, so staff contacted NH Department of Environmental Services, Stergios Spanos, who referred the City to EPA and recommended using the NPDES permit for Remediation Activity Discharge NHG910000, section IV, Pipeline and tank dewatering.

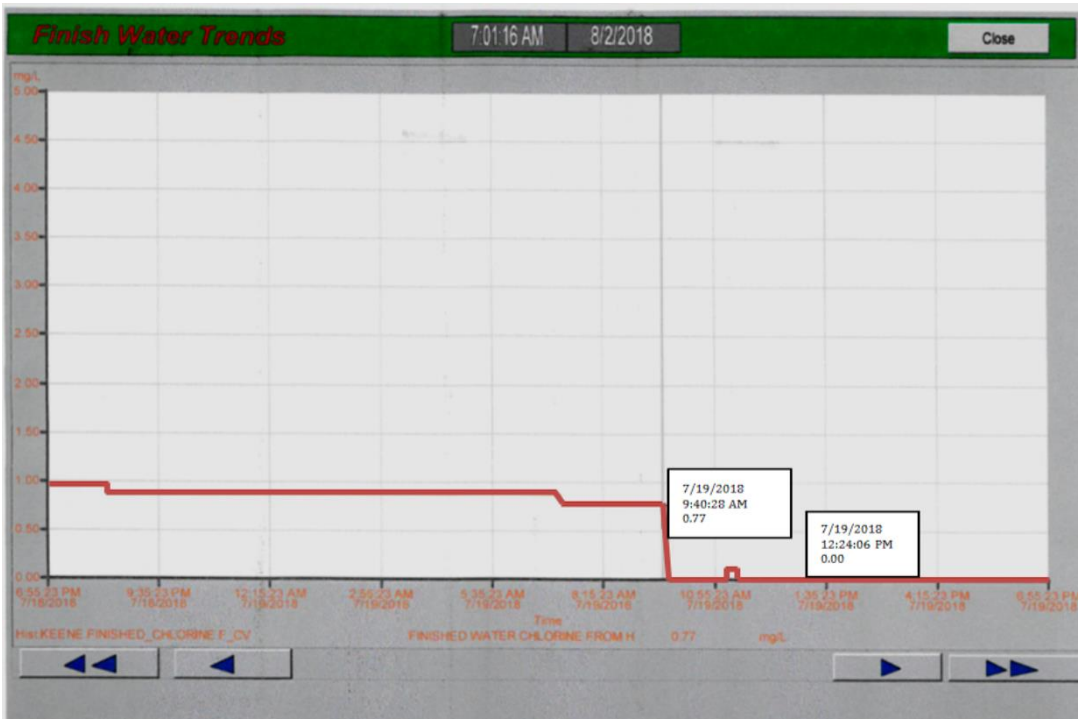
A general description of the need and general expected characteristics of the discharge was provided and NHDES determined that the flow in the receiving stream, Beaver Brook, was very low so discharge limits would be calculated based on there being no dilution.

The water in the storage tank had been treated through the City's drinking water treatment plant and contained free residual chlorine of 0.77 mg/L. After the tank was isolated, the water was treated with 27 pounds of Vita-D-Chlor, an ascorbic acid treatment to neutralize chlorine from drinking water. The Vita-D-Chlor Safety Data sheet and product information page are found in Attachment C.

The powdered chemical was dissolved in a 5-gallon bucket of drinking water. At approximately 9:30 AM on July 19, the 5-gallons were added to the tank through its three access hatches. One submersible sump pump was suspended into each access hatch to provide mixing.

A snip of the SCADA trend graph of the online free chlorine residual for this storage tank in Figure 1 below shows the free residual chlorine in the tank was neutralized to below detection level.

Figure 1



Grab samples were also collected from two of the three access hatches at three different depths and were tested for free chlorine using the Water Treatment Facility's Hach pocket colorimeter, Hach method number 8021. The results are shown below in Table 1.

Table 1 – Free Residual Chlorine, mg/L. Tested after Vita-D-Chlor treatment

	West Access Hatch	East Access Hatch
One foot up from the bottom of the tank	0.14	0.06
Middle of tank – about seven feet up from the bottom	0.07	0.05*
One foot down from the top of the tank	0.06	0.10
*A sample of deionized water used as a blank with the field testing showed a concentration of 0.05 mg/L free chlorine. Sample concentrations equal to or less than 0.05 mg/L were considered not detected per footnote 5 to Table 2 "Chemical-Specific Effluent Limitations and Monitor-Only Requirements".		

After these samples were tested the water remained in the tank with the sump pumps operating until discharge was approved and began on July 24 at 7:55 AM.

Attachment B

Site Map

Eastern Analytical, Inc.

professional laboratory and drilling services

Attachment C

Pre-discharge sample results

Aaron Costa
Keene WWTP
350 Marlboro Street
Keene , NH 03431

Subject: Laboratory Report

Eastern Analytical, Inc. ID: 184501
Client Identification: 1.5MG Storage Tank, Roxbury Rd.
Date Received: 7/19/2018

Dear Mr. Costa :

Enclosed please find the laboratory report for the above identified project. All analyses were performed in accordance with our QA/QC Program. Unless otherwise stated, holding times, preservation techniques, container types, and sample conditions adhered to EPA Protocol. Samples which were collected by Eastern Analytical, Inc. (EAI) were collected in accordance with approved EPA procedures. Eastern Analytical, Inc. certifies that the enclosed test results meet all requirements of NELAP and other applicable state certifications. Please refer to our website at www.easternanalytical.com for a copy of our NELAP certificate and accredited parameters.

The following standard abbreviations and conventions apply to all EAI reports:

Solid samples are reported on a dry weight basis, unless otherwise noted
< : "less than" followed by the reporting limit
> : "greater than" followed by the reporting limit
%R : % Recovery

Eastern Analytical Inc. maintains certification in the following states: Connecticut (PH-0492), Maine (NH005), Massachusetts (M-NH005), New Hampshire/NELAP (1012), Rhode Island (269), Vermont (VT1012) and New York (12072).

The following information is contained within this report: Sample Conditions summary, Analytical Results/Data, Quality Control data (if requested) and copies of the Chain of Custody. This report may not be reproduced except in full, without the the written approval of the laboratory.

If you have any questions regarding the results contained within, please feel free to directly contact me or the chemist(s) who performed the testing in question. Unless otherwise requested, we will dispose of the sample (s) 30 days from the sample receipt date.

We appreciate this opportunity to be of service and look forward to your continued patronage.

Sincerely,

Lorraine Olashaw, Lab Director

7-23-18
Date

6
# of pages (excluding cover letter)

SAMPLE CONDITIONS PAGE

EAI ID#: **184501**

Client: **Keene WWTP**

Client Designation: **1.5MG Storage Tank, Roxbury Rd.**

Temperature upon receipt (°C): 12.4 **Received on ice or cold packs (Yes/No): Y**

Acceptable temperature range (°C): 0-6

Lab ID	Sample ID	Date Received	Date Sampled	Sample Matrix	% Dry Weight	Exceptions/Comments (other than thermal preservation)
184501.01	1.5MG Tank	7/19/18	7/19/18	aqueous		Adheres to Sample Acceptance Policy

Samples were properly preserved and the pH measured when applicable unless otherwise noted. Analysis of solids for pH, Flashpoint, Ignitability, Paint Filter, Corrosivity, Conductivity and Specific Gravity are reported on an "as received" basis.
Immediate analyses, pH, Total Residual Chlorine, Dissolved Oxygen and Sulfite, performed at the laboratory were run outside of the recommended 15 minute hold time.
All results contained in this report relate only to the above listed samples.
References include:
1) EPA 600/4-79-020, 1983
2) Standard Methods for Examination of Water and Wastewater,20th Edition, 1998 and 22nd Edition, 2012
3) Test Methods for Evaluating Solid Waste SW 846 3rd Edition including updates IVA and IVB
4) Hach Water Analysis Handbook, 2nd edition, 1992

LABORATORY REPORT

EAI ID#: **184501**

Client: **Keene WWTP**

Client Designation: **1.5MG Storage Tank, Roxbury Rd.**

Sample ID: 1.5MG Tank

Lab Sample ID: 184501.01

Matrix: aqueous

Date Sampled: 7/19/18

Date Received: 7/19/18

		Analysis			
	Units	**Date**	**Time**	**Method**	**Analyst**
Chloride **7.3**	mg/L	7/20/18	9:49	4500CIE-11	KD
Ammonia-N < 0.05	mg/L	7/20/18	9:36	TM NH3-001	SEL
Solids Suspended < 5	mg/L	7/20/18	13:10	2540D-11	HE

QC REPORT

EAI ID#: **184501**

Client: **Keene WWTP**

Client Designation: **1.5MG Storage Tank, Roxbury Rd.**

Parameter Name	Blank	LCS	LCSD	Units	Date of Analysis	Limits	RPD	Method
Solids Suspended	< 5	93 (103 %R)	86 (96 %R) (8 RPD)	mg/L	7/20/18	90 - 110	20	2540D-11
Chloride	< 1	25 (100 %R)	26 (103 %R) (2 RPD)	mg/L	7/20/18	90 - 110	20	4500CIE-11
Ammonia-N	< 0.05	2.0 (101 %R)	1.9 (94 %R) (7 RPD)	mg/L	7/20/18	90 - 110	20	TM NH3-001

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

LABORATORY REPORT

EAI ID#: **184501**

Client: **Keene WWTP**

Client Designation: **1.5MG Storage Tank, Roxbury Rd.**

Sample ID: 1.5MG Tank

Lab Sample ID: 184501.01
Matrix: aqueous
Date Sampled: 7/19/18
Date Received: 7/19/18

		Analytical Matrix	Units	Date of Analysis	Method	Analyst
Antimony	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Arsenic	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Cadmium	< 0.0001	AqTot	mg/L	7/20/18	200.8	DS
Chromium	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Copper	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Iron	< 0.05	AqTot	mg/L	7/20/18	200.8	DS
Lead	< 0.0001	AqTot	mg/L	7/20/18	200.8	DS
Mercury	< 0.0001	AqTot	mg/L	7/20/18	200.8	DS
Nickel	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Selenium	< 0.001	AqTot	mg/L	7/20/18	200.8	DS
Silver	< 0.0001	AqTot	mg/L	7/20/18	200.8	DS
Zinc	**0.0064**	AqTot	mg/L	7/20/18	200.8	DS
Chromium (VI)	< 0.01	AqTot	mg/L	7/20/18	7196A	RJ
Chromium (III)	< 0.01	AqTot	mg/L	7/20/18	200.8	DS

QC REPORT

EAI ID#: **184501**

Client: **Keene WWTP**

Client Designation: **1.5MG Storage Tank, Roxbury Rd.**

Parameter Name	Blank	LCS	LCSD		Units	Date of Analysis	Limits	RPD	Method
Antimony	< 0.001	1.1 (112 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Arsenic	< 0.001	1.1 (106 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Cadmium	< 0.0001	1.0 (101 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Chromium	< 0.001	1.1 (113 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Copper	< 0.001	1.1 (112 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Iron	< 0.05	11 (103 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Lead	< 0.0001	1.0 (102 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Mercury	< 0.0001	0.0011 (107 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Nickel	< 0.001	1.0 (104 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Selenium	< 0.001	1.1 (111 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Silver	< 0.0001	0.93 (93 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Zinc	< 0.005	0.92 (92 %R)		NA	mg/L	7/20/18	85 - 115	20	200.8
Chromium (VI)	< 0.01	0.15 (93 %R)		NA	mg/L	7/20/18	90 - 110	20	7196A

Samples were analyzed within holding times unless noted on the sample results page.
Instrumentation was calibrated in accordance with the method requirements.
The method blanks were free of contamination at the reporting limits.
The associated matrix spikes and/or Laboratory Control Samples met the above stated criteria.
Exceptions to the above statements are flagged or noted above or on the QC Narrative page.
*/! Flagged analyte recoveries deviated from the QA/QC limits.

Page 1 of _____

CHAIN-OF-CUSTODY RECORD

184501

BOLD FIELDS REQUIRED. PLEASE CIRCLE REQUESTED ANALYSIS.

SAMPLE I.D.	SAMPLING DATE/TIME *IF COMPOSITE, INDICATE BOTH START & FINISH DATE/TIME	MATRIX (SEE BELOW)	GRAB/*COMPOSITE	VOC: 524.2 BTEX 524.2 MTBE ONLY; 8260B 624 VTICs 1,4 DIOXANE; 8021B BTEX HALOS; 8015B GRO MAVPH	SVOC: 8270D 625 SVTICs EDB DBCP ABN A BN PAH; TPHR100 LI L2; 8015B DRO MAEPH; PEST 608 PCB 608 PEST 8081A PCB 8082; OIL & GREASE 1664 TPH 1664	TCLP: TCLP 1311 ABN METALS VOC PEST HERB	METALS: DISSOLVED METALS (LIST BELOW); TOTAL METALS (LIST BELOW)	INORGANICS: TS (TSS) TDS SPEC. CON.; Br Cl F SO4 NO2 NO3-NO2; BOD CBOD T. ALK.; TKN (NH3) T. PHOS. O. PHOS.; pH T. RES. CHLORINE; COD PHENOLS TOC DOC; TOTAL CYANIDE TOTAL SULFIDE; REACTIVE CYANIDE REACTIVE SULFIDE IGNITABILITY FLASHPOINT	MICRO: TOTAL COLIFORM FECAL COLIFORM; ENTEROCOCCI HETEROTROPHIC PLATE COUNT	OTHER	# OF CONTAINERS	NOTES MEOH VIAL #
1.5MG tank	7-19-18 / 1400	DW	G				✓						1	
~~preserved (HNO3)~~ Hasco	7-19-18 / 1400	DW	G						✓				1	
	7-19-18 / 1400	DW	G					✓ ✓					1	

MATRIX: A-AIR; S-SOIL; GW-GROUND WATER; SW-SURFACE WATER; DW-DRINKING WATER; WW-WASTE WATER

PRESERVATIVE: H-HCL; N-HNO_3; S-H_2SO_4; Na-NaOH; M-MEOH

N S

PROJECT MANAGER: Aaron Costa

COMPANY: City of Keene

ADDRESS: 350 Marlboro St

CITY: Keene **STATE:** NH **ZIP:** 03431

PHONE: 603-357-9836 **EXT.:** 6507

FAX:

E-MAIL: acosta@ci.keene.nh.us

SITE NAME: 1.5MG Storage tank, Roxbury Rd.

PROJECT #:

STATE: (NH) MA ME VT **OTHER:**

REGULATORY PROGRAM: NPDES: RGP POTW STORMWATER OR GWP, OIL FUND, BROWNFIELD OR OTHER:

QUOTE #: **PO #:**

DATE NEEDED: 7-20-18

QA/QC REPORTING LEVEL

A B C

OR

PRESUMPTIVE CERTAINTY

REPORTING OPTIONS

PRELIMS: YES OR NO

IF YES: FAX OR PDF

ELECTRONIC OPTIONS

NO FAX E-MAIL PDF EQUIS

TEMP. 12.4 °C

ICE? (YES) NO

SAMPLER(S): Aaron Costa, Todd Tardiff

RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
	7-19-18	1557	
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:

METALS: 8 RCRA 13 PP Fe, Mn Pb, Cu

OTHER METALS:

SAMPLES FIELD FILTERED? ☐ YES ☒ NO

NOTES: (IE: SPECIAL DETECTION LIMITS, BILLING INFO, IF DIFFERENT)

Sb, As, Cd, Cr III + Cr ~~VI~~ VI, Cu
Fe, Pb, Hg, Ni, Se, Ag, Zn

SITE HISTORY:

SUSPECTED CONTAMINATION:

FIELD READINGS:

Eastern Analytical, Inc.
professional laboratory and drilling services
25 CHENELL DRIVE | CONCORD, NH 03301 | 603.228.0525 | 1.800.287.0525 | E-MAIL: CUSTOMERSERVICE@EASTERNANALYTICAL.COM | WWW.EASTERNANALYTICAL.COM

(WHITE: ORIGINAL GREEN: PROJECT MANAGER)

Attachment D

This attachment includes the safety data sheets for the chemicals used in the initial drinking water treatment process. The chemicals are all certified by the National Sanitation Foundation and are approved for use in drinking water treatment.

- Sodium bicarbonate – used for pH stabilization through increase in alkalinity
- PCH 180 – coagulant used to remove organic material from the raw surface water. This chemical is not expected to be present in the treated water, but is included here because it is used in the treatment process.
- Sodium hydroxide – used to adjust the drinking water pH a range of approximately 7.5 to 8 su
- Sodium hypochlorite – used for disinfecting drinking water

The attachment also includes information for Vita-D-Chlor, the chemical used to neutralize the residual chlorine in the tank before discharge. A safety data sheet and general information from the company's website are included.

CHURCH & DWIGHT CO., INC.

CONSUMER PRODUCTS • SPECIALTY PRODUCTS

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

SODIUM BICARBONATE

Manufacturer's Name and Address: Church & Dwight Co., Inc.
469 N. Harrison Street
Princeton, NJ. 08543-5297
USA

24 HOUR EMERGENCY TELEPHONE:
CHEMTREC 1-800-424-9300 (USA)
+001-703-527-3887(INT"L)
Medical Emergency Phone:
1-888-234-1828 (USA)
+001-952-853-1925(INT'L)

Customer Information:
1-800-524-1328 (USA)
+001-609-497-7220 (INT'L)

Product Use: Food ingredient, Pharmaceutical, Water Treatment, General Industrial Use
Chemical Name: Sodium bicarbonate
Chemical Formula: NaHCO3
Synonyms/Common Names: Baking Soda

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

White crystalline powder; no odor.
Not a fire hazard.
No significant health or environmental effects associated with this material.

HMIS Rating	
Health	0
Fire	0
Reactivity	0

Potential Health Effects

EYE: Not an eye irritant.
SKIN CONTACT: Not a skin irritant.

INGESTION: Material is practically non-toxic. Small amounts (1-2 tablespoonfuls) swallowed during normal handling operations are not likely to cause injury as long as the stomach is not overly full; swallowing larger amounts may cause injury (see Note in Section IV).
INHALATION: None known.
SUBCHRONIC EFFECTS/CARCINOGENICITY: Based on published studies on its effects in animals and humans, sodium bicarbonate is not teratogenic or genotoxic. Only known subchronic effect is that of a marked systemic alkalosis. Not classified as carcinogenic by NTP, IARC, OSHA, ACGIH or NIOSH.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Ingredient (% by Weight)		CAS Number
Sodium Bicarbonate	100%	144-55-8

Not hazardous under OSHA Standard 29 CFR 1910.1200.
Not a WHMIS controlled substance.

4. FIRST AID MEASURES

EYES: Check for and remove contacts. Flood eyes with clean flowing water, low pressure and luke warm (not hot) if possible, occasionally lifting eyelids.

INGESTION: If large amounts of this material are swallowed, do not induce vomiting. Administer water if person is conscious. Never give anything by mouth to an unconscious person.

NOTE TO PHYSICIAN: Large doses may produce systemic alkalosis and expansion in extracellular fluid volume with edema.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
FLASHPOINT: Not combustible
METHOD USED: Not applicable

FLAMMABLE LIMITS
LFL: Not applicable
UFL: Not applicable

EXTINGUISHING MEDIA: Non-combustible material. Use extinguishing media appropriate for surrounding fire.
FIRE-FIGHTING INSTRUCTIONS: Carbon Dioxide may be generated making necessary the use of a self-contained breathing apparatus (SCBA) and full protective equipment (Bunker Gear). Carbon dioxide is an asphyxiant at levels over 5% w/w. Sodium oxide, another thermal decomposition product existing at temperatures above 1564°F is a respiratory, eye, and skin irritant. Avoid inhalation, eye and skin contact with sodium oxide dusts.
UNUSUAL FIRE AND EXPLOSION HAZARDS: None known.

6. ACCIDENTAL RELEASE MEASURES

Scoop up into dry, clean containers. Wash away small uncontaminated amounts of residue with water.

7. HANDLING AND STORAGE

Store in cool, dry areas and away from incompatible substances (see Section 10).
Sodium Bicarbonate reacts with acids to yield carbon dioxide gas which can accumulate in confined spaces. Do not enter confined spaces until they have been well ventilated and carbon dioxide and oxygen levels have been determined to be safe.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS: None established.
RESPIRATORY PROTECTION: Dust mask required if total dust level exceeds 10 mg/m^3.
PROTECTIVE GLOVES: General purpose for handling dry product. Impervious gloves when working with solutions.
EYE PROTECTION: Safety glasses when handling bulk material or when dusts are generated.
OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Full cover clothing. Apron where splashing may occur when working with solutions.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: White crystalline powder.
ODOR: None.
PHYSICAL STATE: Solid
pH AS IS: Not Applicable
pH (1% SOLN. w/v): 8.2
VAPOR PRESSURE: Not applicable.
VAPOR DENSITY: Not applicable.
BOILING POINT: Not applicable.
FREEZING/MELTING POINT: Not applicable.
SOLUBILITY IN WATER: 8.6 g/100 ml @ 20°C.
BULK DENSITY (g/cc): 62 lb/Ft^3
% VOCs: Not applicable.
VOLATILE ORGANIC COMPOUNDS: Not applicable.
MOLECULAR WEIGHT: 84.02

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable.

CONDITIONS TO AVOID: Temperatures above 65°C (150°F).
INCOMPATIBILITY WITH OTHER MATERIALS: Reacts with acids to yield carbon dioxide. May also yield free caustic in presence of lime dust (CaO) and moisture (i.e., water, perspiration). Dangerous reaction with monoammonium phosphate or a sodium-potassium alloy may occur.

HAZARDOUS DECOMPOSITION PRODUCTS: Heating above 100°C may cause dangerous levels of carbon dioxide gas to be present in confined spaces. Yields sodium oxide if exposed to temperatures above 850°C. Avoid inhalation, eye and skin contact with sodium oxide.
HAZARDOUS POLYMERIZATION: Not applicable.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS: The material was minimally irritating to unwashed eyes and practically non-irritating to washed eyes (rabbits).
SKIN EFFECTS: Not a skin irritant or dermally toxic. Not a contact sensitizer.
ACUTE ORAL EFFECTS: Acute Oral-rat LD_{50} = 7.3 g/kg.
ACUTE INHALATION: LC_{50} (rat) > 4.74 mg/l.

12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY:

Daphnids:	EC_{50} = 4100 mg/l.
Bluegill:	LC_{50} = 7100 mg/l.
Rainbow Trout:	LC_{50} = 7700 mg/l.

PERSISTENCE: This product is not expected to persist in the environment.
BIOACCUMULATION: This product is not expected to bioaccumulate.
BIODEGRADATION: This material is inorganic and not subject to biodegradation.

13. DISPOSAL CONSIDERATIONS

Bury in a secured landfill in accordance with all local, state and federal environmental regulations. Empty containers may be incinerated or discarded as general trash.

14. TRANSPORTATION INFORMATION

D.O.T. SHIPPING NAME: Not regulated

15. REGULATORY INFORMATION

CLEAN AIR ACT SECTION 611: Material neither contains nor is it manufactured with ozone depleting substances (ODS).

FEDERAL WATER POLLUTION CONTROL ACT (40 CFR 401.15): Material contains no intentionally added or detectable (contaminant) levels of EPA priority toxic pollutants.

FOOD AND DRUG ADMINISTRATION: Generally Recognized As Safe (GRAS) direct food additive (21 CFR 184.1736).

US DEPARTMENT OF AGRICULTURE: List of Proprietary Substances - Permitted Use Codes 3A, J1, A1, G1, and L1.
CERCLA REPORTABLE QUANTITY: None
OSHA: Not hazardous under 29 CFR 1910.1200
RCRA: Not a hazardous material or a hazardous waste by listing or characteristic.
SARA TITLE III:

Section 302, Extremely Hazardous Substances: None
Section 311/312, Hazardous Categories: Non-hazardous
Section 313, Toxic Chemicals: None

Sodium Bicarbonate is reported in the EPA TSCA Inventory List.

Contains no VOCs.

NATIONAL STOCKING NUMBER: 6810002646618, Contract No. DLA 40086C1831
NSF STANDARD 60: Corrosion and Scale Control in Potable Water. Max use 200 mg/l.
CANADA-DSL
EUROPEAN INVENTORY (EINECS): 205-633-8
JAPANESE INVENTORY (MITI): 1-164
AUSTRALIAN INVENTORY (AICS): Carbonic acid, monosodium salt.
KOREA- yes
PHILLIPINE- yes

16. OTHER INFORMATION

SUPERSEDES DATE: 07/12/07 REASON FOR REVISION: New ANSI Revision.

For additional non-emergency health, safety and environmental information telephone 609.279.7705 or write to:

Church & Dwight Co. Inc.
Product Stewardship
469 North Harrison Street
Princeton, New Jersey 08543

Univar USA Inc Safety Data Sheet

TOWN OF KEENE
700 WEST STREET

KEENE
NH 03431

SDS No:	
Version No:	001 04/28/15
Order No:	RP446009

3075 Highland Pkwy, Ste 200, Downers Grove, IL 60515
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: CAUSTIC SODA 25 - 28%

Other means of identification

Synonyms: Sodium Hydroxide

SDS number: 000100000085

Recommended use and restriction on use

Recommended use: Not available.

Restrictions on use: Not known.

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard classification

Health hazards

Acute toxicity (Oral)	Category 4
Skin corrosion/irritation	Category 1A
Serious eye damage/eye irritation	Category 1
Environmental hazards Acute hazards to the aquatic environment	Category 3

Label elements

Hazard symbol

ersion: 1.0
Revision date: 04/28/2015

Signal word	Danger
Hazard statement	Corrosive. Harmful if swallowed. Causes severe skin burns and eye damage.
Precautionary statement	
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust or mists. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage	Store in a closed container. Keep container tightly closed. Store in a well-ventilated place. Store in a dry place. Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	None.

ersion: 1.0
Revision date: 04/28/2015

3. Composition/information on ingredients

Substances

Chemical identity	Common name and synonyms	CAS number	Content in percent (%)*
Sodium hydroxide		1310-73-2	25%
Water		7732-18-5	75%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

eneral information: CAUTION! First aid personnel must be aware of own risk during rescue!

ngestion: Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately.

Inhalation: Move to fresh air. If breathing is difficult, give oxygen. Perform artificial respiration if breathing has stopped. Get medical attention immediately.

Skin contact: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Eye contact: If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment: No data available.

5. Fire-fighting measures

General fire hazards: No data available.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Use: Powder. In case of fire in the surroundings: all extinguishing agents allowed.

Unsuitable extinguishing media: No data available.

Specific hazards arising from the chemical: No data available.

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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
Special protective equipment for fire-fighters:	No data available.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Use personal protective equipment. Keep unauthorized personnel away.
Methods and material for containment and cleaning up:	Absorb spillage with non-combustible, absorbent material. Dike for later disposal.

7. Handling and storage

recautions for safe handling:	Use personal protective equipment as required. Use only with adequate ventilation. Container must be kept tightly closed.
Conditions for safe storage, including any incompatibilities:	No data available.

ersion: 1.0
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8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Chemical identity	Type	Exposure Limit values	Source
Sodium hydroxide	Ceiling	2 mg/m3	US. ACGIH Threshold Limit Values (03 2013)
	Ceil_Time	2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	Ceiling	2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	2 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Sodium hydroxide - Particulate.	ST ESL	20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
Sodium hydroxide	Ceiling	2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)

Appropriate engineering controls No data available.

Individual protection measures, such as personal protective equipment

General information: Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned. Practice good housekeeping.

Eye/face protection: Use personal protective equipment as required. Wear goggles/face shield.

Skin protection

Hand protection: No data available.

Other: No data available.

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Respiratory protection:	No data available.
Hygiene measures:	No data available.

9. Physical and chemical properties

Physical state:	Liquid
Form:	No data available.
Color:	No data available.
Odor:	No data available.
Odor threshold:	No data available.
pH:	14
Melting point/freezing point:	-25 °C
Initial boiling point and boiling range:	116 °C
ash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	No data available.
Solubility(ies)	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

ersion: 1.0
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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:	No data available.
Hazardous decomposition products:	No data available.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion:	No data available.
Inhalation:	No data available.
Skin contact:	No data available.
Eye contact:	No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (): 325 mg/kg

Dermal

Product: No data available.

Inhalation

Product: No data available.

Repeated dose toxicity

Product: No data available.

Skin corrosion/irritation

Product: No data available.

Serious eye damage/eye irritation

Product: No data available.

Respiratory or skin sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

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IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ cell mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific target organ toxicity - single exposure

Product: No data available.

Specific target organ toxicity - repeated exposure

Product: No data available.

Aspiration hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Sodium hydroxide — LC 50 (Western mosquitofish (Gambusia affinis), 24 h): 125 mg/l Mortality LC 50 (Guppy (Poecilia reticulata), 24 h): 145 mg/l Mortality LC 50 (Goldfish (Carassius auratus), 24 h): 160 mg/l Mortality LC 50 (Bony fish superclass (Osteichthyes), 48 h): 33 - 100 mg/l Mortality LC 50 (Western mosquitofish (Gambusia affinis), 48 h): 125 mg/l Mortality

Aquatic invertebrates

Product: No data available.

Specified substance(s):

Sodium hydroxide — EC 50 (Water flea (Ceriodaphnia dubia), 48 h): 34.59 - 47.13 mg/l Intoxication LC 50 (Common shrimp, sand shrimp (Crangon crangon), 48 h): 33 - 100 mg/l Mortality LC 50 (Cockle (Cerastoderma edule), 48 h): 330 -

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1,000 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and degradability

Biodegradation

Product: No data available.

BOD/COD ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration factor (BCF)

Product: No data available.

Partition coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in soil: No data available.

Known or predicted distribution to environmental compartments

Sodium hydroxide No data available.

Water No data available.

Known or predicted distribution to environmental compartments

Water No data available.

13. Disposal considerations

Disposal instructions: No data available.

Contaminated packaging: No data available.

14. Transport information

DOT

UN number: UN 1824

UN proper shipping name: Sodium hydroxide solution

Transport hazard class(es)

Class: 8

Label(s): 8

Packing group: II

Marine Pollutant: Not regulated.

Special precautions for user: –

IMDG

UN number: UN 1824
UN proper shipping name: SODIUM HYDROXIDE SOLUTION
Transport hazard class(es)
Class: 8
Label(s): 8
EmS No.: F-A, S-B
Packing group: II
Marine Pollutant: Not regulated.
Special precautions for user: –

IATA

UN number: UN 1824
Proper Shipping Name: Sodium hydroxide solution
Transport hazard class(es):
Class: 8
Label(s): 8
Packing group: II
Environmental hazards Not regulated.
Special precautions for user: –
Other information
Passenger and cargo aircraft: Allowed.
Cargo aircraft only: Allowed.

15. Regulatory information

US federal regulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Sodium hydroxide Reportable quantity: 1000 lbs.

Superfund amendments and reauthorization act of 1986 (SARA)

Hazard categories

Not listed.

ersion: 1.0
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SARA 302 Extremely hazardous substance

None present or none present in regulated quantities.

SARA 304 Emergency release notification

Chemical identity	RQ
Sodium hydroxide	1000 lbs.

SARA 311/312 Hazardous chemical

Chemical identity	Threshold Planning Quantity
Sodium hydroxide	500 lbs

SARA 313 (TRI reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Sodium hydroxide — Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

'IS state regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide — Listed

US. Massachusetts RTK - Substance List

Sodium hydroxide — Listed

US. Pennsylvania RTK - Hazardous Substances

Sodium hydroxide — Listed

US. Rhode Island RTK

Sodium hydroxide — Listed

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Inventory Status: Australia AICS:	Not in compliance with the inventory.
Canada DSL Inventory List:	Not in compliance with the inventory.
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	Not in compliance with the inventory.
Japan (ENCS) List:	Not in compliance with the inventory.
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	Not in compliance with the inventory.
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	Not in compliance with the inventory.
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.

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

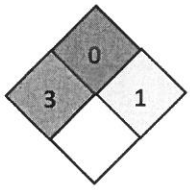
HMIS Hazard ID

Health	*	3
Flammability		0
Physical hazards		1
PERSONAL PROTECTION		B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; *Chronic health effect

NFPA Hazard ID



Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe

Issue date:	04/28/2015
Revision date:	No data available.
Version #:	1.0
Further information:	No data available.

ersion: 1.0
Revision date: 04/28/2015

Univar USA Inc Safety Data Sheet

For Additional Information contact SDS Coordinator during business hours, Pacific time: (425) 889-3400

Notice

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Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process

Univar USA Inc Safety Data Sheet

TOWN OF KEENE
555 ROXBURY ST

KEENE
NH 03431

SDS No:	
Version No:	004 03/15/17
Order No:	RP454148

3075 Highland Pkwy, Ste 200, Downers Grove, IL 60515
(425) 889 3400

Emergency Assistance

For emergency assistance involving chemicals call
Chemtrec - (800) 424-9300

Univar
3075 Highland Pkwy STE 200
Downers Grove, IL 60515
425-889-3400

SAFETY DATA SHEET

1. Identification

Product identifier: SODIUM HYPOCHLORITE 10-16%

Other means of identification

Synonyms:	Liquichlor, Bleach
CAS NUMBERS:	7681-52-9
SDS number:	000100001054

Recommended use and restriction on use

Recommended use: Reserved for industrial and professional use.

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

Univar

3075 Highland Pkwy STE 200

Downers Grove, IL 60515

425-889-3400

Emergency telephone number:For emergency assistance Involving chemicals

call CHEMTREC day or night at: 1-800-424-9300. CHEMTREC INTERNATIONAL Tel# 703-527-3887

2. Hazard(s) identification

Hazard Classification

Physical Hazards	
Corrosive to metals	Category 1
Health Hazards	
Acute toxicity (Oral)	Category 4
Skin Corrosion/Irritation	Category 1
Serious Eye Damage/Eye Irritation	Category 1
Environmental Hazards Acute hazards to the aquatic environment	Category 1

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UNIVAR®

Label Elements

Hazard Symbol

Signal Word	Danger
Hazard Statement	May be corrosive to metals. Causes severe skin burns and eye damage. Causes serious eye damage. Very toxic to aquatic life.
Precautionary Statements	
Prevention	Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Do not breathe dust or mists. Wear protective gloves/protective clothing/eye protection/face protection.
Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF SWALLOWED: Call a POISON CENTER/doctor/ if you feel unwell. Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before reuse.

Storage	Store locked up.
Disposal	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification	None.

3. Composition/information on ingredients

Substances

Chemical Identity	Common name and synonyms	CAS number	Content in percent (%)*
Sodium hypochlorite		7681-52-9	10 - 16%
Sodium hydroxide		1310-73-2	0.3 - 5%
Water		7732-18-5	80 - 89.7%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information:	Get medical advice/attention.
Ingestion:	Do NOT induce vomiting. Never give liquid to an unconscious person. Get medical attention immediately.
Inhalation:	Call a physician or poison control center immediately. If breathing stops, provide artificial respiration. Move to fresh air. If breathing is difficult, give oxygen.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Eye contact:	If in eyes, hold eyes open, flood with water for at least 15 minutes and see a doctor.

Most important symptoms/effects, acute and delayed

Symptoms: No data available.

Indication of immediate medical attention and special treatment needed

Treatment:	Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Use: Foam. Carbon dioxide or dry powder.
Unsuitable extinguishing media:	No data available.
Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
Methods and material for containment and cleaning up:	Absorb spillage with non-combustible, absorbent material.
Notification Procedures:	Dike for later disposal. Prevent entry into waterways, sewer, basements or confined areas. Stop the flow of material, if this is without risk.
Environmental Precautions:	Do not contaminate water sources or sewer. Avoid release to the environment.

7. Handling and storage

Precautions for safe handling:	Do not taste or swallow. Wash hands thoroughly after handling. Do not get in eyes. Do not get in eyes, on skin, on clothing.
Conditions for safe storage, including any incompatibilities:	Store locked up.

'ersion: 1.0
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8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
Sodium hydroxide	Ceiling	2 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
Sodium hydroxide - Particulate.	ST ESL	20 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
	AN ESL	2 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (02 2013)
Sodium hydroxide	Ceiling	2 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (02 2012)
	Ceiling	2 mg/m3	US. ACGIH Threshold Limit Values (03 2016)
	Ceil_Time	2 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	2 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (03 2016)
	Ceiling	2 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)

Appropriate Engineering Controls Adequate ventilation should be provided so that exposure limits are not exceeded.

Individual protection measures, such as personal protective equipment

General information: Provide easy access to water supply and eye wash facilities. Use personal protective equipment as required. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

Eye/face protection: Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection

Hand Protection: Chemical resistant gloves

Other: Chemical resistant clothing

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Respiratory Protection:	In case of inadequate ventilation use suitable respirator.
Hygiene measures:	Do not eat, drink or smoke when using the product. Wash hands after handling. Do not get in eyes. Observe good industrial hygiene practices. Wash contaminated clothing before reuse. Do not get this material in contact with skin. Wash hands before breaks and immediately after handling the product.

9. Physical and chemical properties

Physical state:	liquid
Form:	liquid
Color:	Pale yellow-green, Clear
Odor:	Odor of chlorine
Odor threshold:	No data available.
pH:	10 - 12
Melting point/freezing point:	-20 °C
Initial boiling point and boiling range:	> 40 °C
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.
Vapor density:	No data available.
Relative density:	1.224
Solubility(ies)	
Solubility in water:	Soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.

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Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.
Chemical Stability: Material is stable under normal conditions.
Possibility of hazardous reactions: Stable
Conditions to avoid: Avoid heat or contamination.
Incompatible Materials: Oxidizers, acids Ammonia. Amines.
Hazardous Decomposition Products: By heating and fire, toxic vapors/gases may be formed.

11. Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

Ingestion: No data available.
Inhalation: No data available.
Skin Contact: No data available.
Eye contact: No data available.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral
Product: LD50 (Rat): 3 - 5 g/kg

Dermal
Product: LD50 (Rabbit): > 2 g/kg

Inhalation
Product: May be harmful if inhaled.

Repeated dose toxicity
Product: No data available.

Skin Corrosion/Irritation
Product: Causes severe skin burns.

Serious Eye Damage/Eye Irritation
Product: Causes serious eye damage.

Respiratory or Skin Sensitization
Product: Not a skin sensitizer.

Carcinogenicity
Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:
No carcinogenic components identified

US. National Toxicology Program (NTP) Report on Carcinogens:
No carcinogenic components identified

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):
No carcinogenic components identified

Germ Cell Mutagenicity

In vitro

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: LC50 (Shiner perch (Cymatogaster aggregata), 96 h): 0.033 - 0.097 mg/l
LC50 (Bluegill (Lepomis macrochirus), 48 h): 0.6 mg/l

Aquatic Invertebrates

Product: LC50 (Aquatic crustacea): 1 mg/l LC50 (Daphnia magna, 96 h): 2.1 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: EC50 (Green algae (Dunaliella bioculata), 24 h): 0.6 mg/l

Persistence and Degradability

Biodegradation

Product:	The product solely consists of inorganic compounds which are not biodegradable.
BOD/COD Ratio	
Product:	No data available.
Bioaccumulative Potential	
Bioconcentration Factor (BCF)	
Product:	The product is not bioaccumulating.
Partition Coefficient n-octanol / water (log Kow)	
Product:	No data available.
Mobility in Soil:	No data available.
Known or predicted distribution to environmental compartments	
Sodium hypochlorite	No data available.
Sodium hydroxide	No data available.
Water	No data available.
Known or predicted distribution to environmental compartments	
Water	No data available.

13. Disposal considerations

Disposal instructions:	Discharge, treatment, or disposal may be subject to national, state, or local laws.
Contaminated Packaging:	Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number:	UN 1791
UN Proper Shipping Name:	Hypochlorite solutions
Transport Hazard Class(es)	
Class:	8
Label(s):	8
Packing Group:	III
Marine Pollutant:	Marine Pollutant

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Special precautions for user: –

IMDG

UN Number:	UN 1791
UN Proper Shipping Name:	HYPOCHLORITE SOLUTION
Transport Hazard Class(es)	
Class:	8
Label(s):	8
EmS No.:	F-A, S-B
Packing Group:	III
Marine Pollutant:	Not regulated.
Special precautions for user:	–

15. Regulatory information

US Federal RegulationsUS. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

Sodium hypochlorite	Reportable quantity: 100 lbs.
Sodium hydroxide	Reportable quantity: 1000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

[X] Acute (Immediate) [ ] Chronic (Delayed) [ ] Fire [ ] Reactive [ ] Pressure Generating

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

Chemical Identity	RQ
Sodium hypochlorite	100 lbs.
Sodium hydroxide	1000 lbs.

SARA 311/312 Hazardous Chemical

Chemical Identity	Threshold Planning Quantity
Sodium hypochlorite	10,000 lbs
Sodium hydroxide	10,000 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

Sodium hypochlorite	Reportable quantity: 100 lbs.
Sodium hydroxide	Reportable quantity: 1000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

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US State Regulations

US. California Proposition 65

No ingredient regulated by CA Prop 65 present.

US. New Jersey Worker and Community Right-to-Know Act

Sodium hypochlorite	Listed
Sodium hydroxide	Listed

US. Massachusetts RTK - Substance List

Sodium hypochlorite	Listed
Sodium hydroxide	Listed

US. Pennsylvania RTK - Hazardous Substances

Sodium hypochlorite	Listed
Sodium hydroxide	Listed

US. Rhode Island RTK

Sodium hypochlorite	Listed
Sodium hydroxide	Listed

ersion: 1.0
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Inventory Status: Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
EU EINECS List:	On or in compliance with the inventory
EU ELINCS List:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
EU No Longer Polymers List:	Not in compliance with the inventory.
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Canada NDSL Inventory:	Not in compliance with the inventory.
Philippines PICCS:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Japan Pharmacopoeia Listing:	Not in compliance with the inventory.
US TSCA Inventory:	On or in compliance with the inventory

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

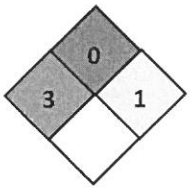
HMIS Hazard ID

Health		3
Flammability		0
Physical Hazards		1
PERSONAL PROTECTION		B

B - Safety Glasses & Gloves

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible; *Chronic health effect

NFPA Hazard ID



Flammability
Health
Reactivity
Special hazard.

Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	03/15/2017
Revision Date:	No data available.
Version #:	1.0
Further Information:	No data available.

Version: 1.0
Revision Date: 03/15/2017

Univar USA Inc Safety Data Sheet

For Additional Information contact SDS Coordinator during business hours, Pacific time: (425) 889-3400

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Do not use ingredient information and/or ingredient percentages in this SDS as a product specification. For product specification information refer to a product specification sheet and/or a certificate of analysis. These can be obtained from your local Univar sales office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar's control and therefore users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein.

This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process

WPH 1000
Safety Data Sheet

CalgonCarbon

Issued: 04/20/2015
Supersedes: 12/30/2011
Version: 1.0

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1. Product identifier

Product name : WPH 1000

Product form : Substance

CAS No : 7440-44-0

Product code : 13845

Synonyms : Activated Carbon

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Adsorbent

1.3. Details of the supplier of the safety data sheet

Calgon Carbon Corporation
P.O. Box 717
Pittsburgh, PA 15230
412-787-6700

1.4. Emergency telephone number

Emergency number : CHEMTREC (24 HRS): 1-800-424-9300

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

GHS-US classification

Combustible Dust H232

Not classified as a simple asphyxiant. Product does not displace oxygen in the ambient atmosphere, but slowly adsorbs oxygen from a confined space when wet. Under conditions of anticipated and recommended use, product does not pose an asphyxiation hazard.

2.2. Label elements

GHS-US labeling

Signal word (GHS-US) : **Warning**

Hazard statements (GHS-US) : H232 - May form combustible dust concentrations in air

2.3. Other hazards

Other hazards not contributing to the classification : Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

2.4. Unknown acute toxicity (GHS-US)

No data available

SECTION 3: Composition/Information on Ingredients

3.1. Substance

Name	Product identifier	%
Activated Carbon	(CAS No) 7440-44-0	< 100

3.2. Mixture

Not applicable

SECTION 4: First Aid Measures

4.1. Description of first aid measures

First-aid measures general : If exposed or concerned, get medical attention/advice. Show this safety data sheet to the doctor in attendance. Wash contaminated clothing before re-use. Never give anything to an unconscious person.

First-aid measures after inhalation : IF INHALED: Remove to fresh air and keep at rest in a comfortable position for breathing.

First-aid measures after skin contact : IF ON SKIN (or clothing): Remove affected clothing and wash all exposed skin with water for at least 15 minutes.

First-aid measures after eye contact : IF IN EYES: Immediately flush with plenty of water for at least 15 minutes. Remove contact lenses if present and easy to do so. Continue rinsing.

First-aid measures after ingestion : IF SWALLOWED: Rinse mouth thoroughly. Do not induce vomiting without advice from poison control center or medical professional. Get medical attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. However, dust may cause irritation and redness of the eyes, irritation of the skin and respiratory system. The effects of long-term, low-level exposures to this product have not been determined.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting Measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray. Carbon dioxide. Dry chemical. Foam. Sand.

Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Dust may be combustible under specific conditions. May be ignited by heat, sparks or flames.

Explosion hazard : Dust may form explosive mixture in air.

Reactivity : No dangerous reactions known under normal conditions of use. Carbon oxides may be emitted upon combustion of material.

5.3. Advice for firefighters

Firefighting instructions : Wear NIOSH-approved self-contained breathing apparatus suitable for the surrounding fire. Use water spray or fog for cooling exposed containers. Evacuate area.

SECTION 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Evacuate area. Keep upwind. Ventilate area. Spill should be handled by trained clean-up crews properly equipped with respiratory equipment and full chemical protective gear (see Section 8).

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters. Avoid release to the environment. Product is not soluble, but can cause particulate emission of discharged into waterways. Dike all entrances to sewers and drains to avoid introducing material to waterways. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

For containment : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust.

Methods for cleaning up : Sweep or shovel spills into appropriate container for disposal. Minimize generation of dust. Dispose of material in compliance with local, state, and federal regulations.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Precautions for safe handling : Avoid dust formation. Avoid contact with skin, eyes and clothing. Do not handle until all safety precautions have been read and understood. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Keep away from sources of ignition - No smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container tightly closed in a cool, dry, and well-ventilated place. Keep away from ignition sources.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Activated Carbon (7440-44-0)*	
OSHA PEL (TWA) (mg/m³)	≤ 5 (Respirable Fraction) ≤ 15 (Total Dust)

*Exposure limits are for inert or nuissance dust. No specific exposure limits have been established for this activated carbon product by OSHA or ACGIH.

8.2. Exposure controls

Appropriate engineering controls : Provide adequate general and local exhaust ventilation. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Use explosion-proof equipment with flammable materials. Ensure adequate ventilation, especially in confined areas. Wet activated carbon can deplete oxygen from air in enclosed spaces. If use in an enclosed space is required, procedures for work in an oxygen deficient environment should be followed.

Personal protective equipment : Gloves. Safety glasses. Insufficient ventilation: wear respiratory protection.

Hand protection : Gloves should be classified under Standard EN 374 or ASTM F1296. Suggested glove materials are: Neoprene, Nitrile/butadiene rubber, Polyethylene, Ethyl vinyl alcohol laminate, PVC or vinyl. Suitable gloves for this specific application can be recommended by the glove supplier.

Eye protection : Use eye protection suitable to the environment. Avoid direct contact with eyes.

Skin and body protection : Wear long sleeves, and chemically impervious PPE/coveralls to minimize bodily exposure.

Respiratory protection : Use NIOSH-approved dust/particulate respirator. Where vapor, mist, or dust exceed PELs or other applicable OELs, use NIOSH-approved respiratory protective equipment.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Granular, powder, or pelletized substance
Color	: Black
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: Not applicable
Melting point	: Not applicable
Freezing point	: Not applicable
Boiling point	: Not applicable
Flash point	: No data available
Auto-ignition temperature	: > 220 °C
Decomposition temperature	: No data available
Flammability (solid, gas)	: > 220 °C
Vapor pressure	: Not applicable
Relative vapor density at 20 °C	: Not applicable
Apparent density	: 0.4 - 0.7 g/cc
Solubility	: Insoluble.
Log Pow	: Not applicable
Log Kow	: Not applicable
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

No additional information available

SECTION 10: Stability and Reactivity

10.1. Reactivity

No dangerous reactions known under normal conditions of use.

10.2. Chemical stability

Stable under use and storage conditions as recommended in section 7.

10.3. Possibility of hazardous reactions

None known.

10.4. Conditions to avoid

Avoid dust formation. Heat. Ignition sources. Exposure to high concentrations of organic compounds may cause bed temperature to rise.

10.5. Incompatible materials

Alkali metals. Strong oxidizing agents.

10.6. Hazardous decomposition products

Carbon monoxide (CO), carbon dioxide (CO_2).

SECTION 11: Toxicological Information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Activated Carbon (7440-44-0)	
LD50 oral rat	> 2000 mg/kg

Skin corrosion/irritation : Not classified

Serious eye damage/irritation : Not classified

Respiratory or skin sensitisation : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : Not classified

Silica: Crystalline, quartz (14808-60-7)	
IARC group	1 - Carcinogenic to humans
The International Agency for Research on Cancer (IARC) has classified "silica dust, crystalline, in the form of quartz or cristobalite" as carcinogenic to humans (group 1). However these warnings refer to crystalline silica dusts and do not apply to solid activated carbon containing crystalline silica as a naturally occuring, bound impurity. As such, we have not classified this product as a carcinogen in accordance with the US OSHA Hazard Communication Standard (29 CFR §1910.1200) but recommend that users avoid inhalation of product in a dust form.	

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : Not classified

Aspiration hazard : Not classified

Symptoms/injuries : Not expected to present a significant hazard under anticipated conditions of normal use. However, dust may cause irritation and redness of the eyes, irritation of the skin and respiratory system. The effects of long-term, low-level exposures to this product have not been determined.

SECTION 12: Ecological Information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Waste treatment and disposal methods	:	Vacuum or shovel material into a closed container. Dispose in a safe manner in accordance with local/national regulations. Do not allow the product to be released into the environment. Subject to Calgon Carbon technical approval, non-powdered activated carbons may be reactivated to allow recycle and reuse.
Additional information	:	Activated carbon is an adsorbent media; hazard classification is generally determined by the adsorbate. Consult U.S. EPA guidelines listed in 40 CFR 261.3 for more information on hazardous waste disposal.

SECTION 14: Transport Information

14.1. In accordance with DOT

Not classified as hazardous for domestic land transport

UN-No.(DOT)	:	None on finished product
DOT NA no.	:	None on finished product
Proper Shipping Name (DOT)	:	Not regulated
Department of Transportation (DOT) Hazard Classes	:	None on finished product
Hazard labels (DOT)	:	None on finished product
Packing group (DOT)	:	None on finished product
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	:	None on finished product

14.2. Transport by sea

Not classified as hazardous for water transport

IMO / IMDG

UN/NA Identification Number	:	None on finished product
UN- Proper Shipping Name	:	Not regulated
Transport Hazard Class	:	None on finished product

14.3. Air transport

Not classified as hazardous for air transport

ICAO / IATA

UN/NA No	:	None on finished product
UN- Proper Shipping Name	:	Not regulated
Transport Hazard Class	:	None on finished product
Packing Group	:	None on finished product
Marine Pollutant	:	None on finished product

14.4. Additional information

Other information : Under the UN classification for activated carbon, all activated carbons have been identified as a class 4.2 product. However, this product type or an equivalent has been tested according to the United Nations Transport of Dangerous Goods test protocol for a "self-heating substance" (*United Nations Transportation of Dangerous Goods, Manual of Tests and Criteria, Part III, Section 33.3.1.6 - Test N.4 - Test Method for Self Heating Substances)* and it has been specifically determined that this product type or an equivalent does not meet the definition of a self-heating substance (class 4.2) or any other hazard class, and therefore should not be listed as a DOT hazardous material.

SECTION 15: Regulatory Information

15.1. US Federal regulations

WPH 1000
All chemical substances in this product are listed in the EPA (Environment Protection Agency) TSCA (Toxic Substances Control Act) Inventory or are exempt

Cobalt (7440-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on United States SARA Section 313	
SARA Section 313 - Emission Reporting	0.1 %

15.2. International regulations

No additional information available

15.3. US State regulations

California Proposition 65

WARNING: This product contains, or may contain, trace quantities of a substance(s) known to the state of California to cause cancer, birth defects, or other reproductive harm.

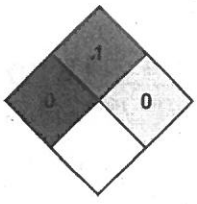
Silica: Crystalline, quartz (14808-60-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA
Cobalt (7440-48-4)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA
Titanium dioxide (13463-67-7)				
U.S. - California - Proposition 65 - Carcinogens List	U.S. - California - Proposition 65 - Developmental Toxicity	U.S. - California - Proposition 65 - Reproductive Toxicity - Female	U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No significance risk level (NSRL)
Yes	No	No	No	NA

Aluminum oxide (1344-28-1)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Massachusetts - Right to Know List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
Calcium sulfate (7778-18-9)
U.S. - Massachusetts - Right to Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List
Silica: Crystalline, quartz (14808-60-7)
U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - Massachusetts - Right to Know List

SECTION 16: Other Information

Indication of changes : Revision 1.0: New SDS Created.
Revision Date : 04/20/2015
Other information : Author: CJS.
For internal use only : PR #1
Prepared according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

NFPA health hazard : 0 - Exposure under fire conditions would offer no hazard beyond that of ordinary combustible materials.
NFPA fire hazard : 1 - Must be preheated before ignition can occur.
NFPA reactivity : 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



HMIS III Rating

Health : 0
Flammability : 1

Physical	: 0
Personal Protection	:

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product. The information is this document applies to this specific material as supplied. It may not be valid if product is used in combination with other materials. It is the user's responsibility to determine the suitability and completeness of this information for their particular use. While the information and recommendations set forth herein are believed to be accurate as of the date hereof, Calgon Carbon Corporation makes no warranty with respect to the same, and disclaims all liability for reliance thereon.

Since 1967

Holland Company

PCH 180, PCH 182

Safety Data Sheet

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product/Chemical Name: PCH 180, PCH 182
Chemical Family: Inorganic aluminum salt
General use: Water treatment and manufacturing applications

Company Information:
Holland Company, Inc.
153 Howland Avenue
Adams, MA 01220 U.S.A.
Phone: 413-743-1292 FAX: 413-743-1298

Emergency Phone:
1-800-424-9300 Chemtrac (USA)
1-613-996-6666 or Cell *666 CANTUTEC (Canada)

SECTION 2. HAZARDS IDENTIFICATION

WARNING - IRRITANT
AVOID CONTACT

WARNING - CORROSION
Corrosive to Some Metals

Hazard Statements
Harmful if ingested.
Irritating to skin and eyes.
Untreated contact with eyes may result in damage.
Mist is irritating to respiratory system.
Will corrode some metals.

Precautionary Statements
Avoid direct contact.
Use protective equipment if direct contact is possible.
Wash hands thoroughly after contact.
Use appropriate materials of construction for storage and handling.

SECTION 3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance
Chemical name: Aluminum soluble salts (liquid)
Name: PCH 180, PCH 182 / Liquid Polyaluminum Chloride
CAS#: 14215-15-7
Impurities: NA. No impurities or additives which are themselves classified and which contribute to the classification of the substance.

SECTION 4. FIRST AID MEASURES

Inhalation of mist or liquid:
Remove from continued exposure.
Get medical attention if difficulty with breathing or uncontrolled coughing occurs.
Skin contact:
Remove contaminated clothing - footwear and wash skin with water.
If irritation develops get medical attention.
Eye contact:
A stinging - irritating sensation will occur.
Immediately rinse eyes with water for an extended period.
Get medical attention. Untreated exposure may result in damage to the eyes.
Ingestion:
Spontaneous vomiting may occur.
Do not actively induce vomiting.
Rinse mouth and drink water.
Get medical attention.

SECTION 5. FIRE FIGHTING MEASURES

Flammability:
Product is not flammable and will not burn.
Controls:
To maintain the integrity use water to keep containers cool.
If possible remove portable containers from areas under fire threat.
Hazards:
In a fire dried product can decompose at elevated temperatures resulting in the formation of hydrogen chloride fumes. Exposure to products of decomposition during a fire may be hazardous to health. Stay up wind and avoid low areas.
Special equipment:
In case of possible exposure to products of decomposition use appropriate self-contained or other approved respiratory protection. Consult engineers if necessary.
Mechanical impact:
Not sensitive.
Static discharge:
Not sensitive.

SECTION 6. ACCIDENTIAL RELEASE MEASURES

General:
Site specific procedures to address accidental spills are necessary as dictated by facility design, location, staffing, containment structures, and regulatory requirements. Consult engineers if necessary.

Personal protection:
In the event of a spill clear unnecessary staff from spill area.
If direct contact with spilled material is likely use protective equipment.

Small spills:
Manage spill using containment structures or inert materials and collect for reuse.
Product not reused can be neutralized and converted to aluminum hydroxide using a mild alkali such as soda ash, or calcium carbonate (agricultural lime). Neutralized residue can be swept up or rinsed down with water and captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations. Consult engineers if necessary.

Large spills:
Manage spill using containment structures or inert materials and collect for reuse.
Product not reused can be neutralized and converted to aluminum hydroxide using a mild alkali such as soda ash, or calcium carbonate (agricultural lime). Neutralized residue can be swept up or rinsed down with water and captured using absorbent materials for disposal in accordance with local, state, province, and federal regulations. Caution: When neutralizing large spills CO_2 will be created and can be a breathing hazard. Take steps to provide adequate ventilation. Consult engineers if necessary.

SECTION 7. HANDLING AND STORAGE

Incompatible Chemicals:
Avoid contact with sodium hypochlorite (bleach), chlorites, sulfites, strong bases, aqua ammonia and other similar materials. Consult engineers if necessary.

Containment:
To minimize the possibility of a release into the environment and contact with other incompatible chemicals, storage tanks and containers should have a dedicated liquid tight secondary containment system. Consult engineers if necessary.

General hygiene:
Do not eat, drink, take medication or smoke when direct contact is possible.
Always thoroughly wash hands after leaving a work area where contact is possible or has occurred.

Storage: Use tanks, transfer lines, pumps valves and process instrumentation designed for this material using appropriate materials of construction. Some materials commonly used are FRP, plastic, PVC, CPVC, Teflon®, and Hastelloy® metal alloys. To prevent possible corrosion damage avoid the use of common metals such as copper, aluminum, iron, steel, and low grades of SS. Consult engineers if necessary.
Clean storage tanks on a regular schedule based on inspection and experience.
Have storage tanks, containers, and transfer systems properly labeled for contents.
Have procedures for determining product quantity in storage tanks and for accepting deliveries.

Temperature for storage: Preferred storage temperature range is 7C-35C (45F-95F).
Outside of these temperature ranges optimal product performance and shelf life may be affected.

Ventilation: No special requirements.

Personal protection:
If direct contact with material is likely use protective equipment.

SECTION 8. EXPOSURE CONTROL / PERSONNAL PROTECTION

Exposure Limits

Ingredient: aluminum soluble salts

OSHA PEL		ACGIH TLV		NIOSH
TWA	ST	TWA	STEL	IDLH
2mg/m^3 as Al	none est.	2mg/m^3 as Al	none est.	none est.

Respiratory - Ventilation: Local passive ventilation is typically used. Under normal conditions respiratory protective equipment is not needed. If work requires direct exposure to product mist use appropriate, approved respiratory protection. Consult engineers if necessary.
Eye wash: Have an appropriate eye wash bottle, fountain, or safety shower available in the work area.
Eyes: Use protective eye glasses-goggles and face shield protection to prevent direct contact.
Skin: Use impervious gloves and foot covering. Wear long sleeve shirts and full length trousers.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid clear to slight haze.
Flammability: Not flammable.
Upper/lower flammability limits: NA
Auto ignition: NA
Flash point: NA
Odor: Not significant. Free from organic or solvent odors.
Vapor density: NA
pH: 2.5-2.8 @ 25C (77F) as is basis
Density: 1.26 - 1.28 S.G. @ 21C (70F)
Melting/Freeze point: -10C (14F) + -
Boiling point-range: 105C-115C (221F-235F)
Water Solubility: Complete.
Evaporation rate: NA
Partial coefficient: n-octanol/water; NA, inorganic compound column 2 of REACH Annex VII.
Decomposition temperature: >200C (392F)
Viscosity: 20-35 centipoise/mPa.s @ 23C (73F)
VOC: 0.0

SECTION 10. STABILITY AND REACTIVITY

Chemical stability:
Product is chemically stable under normal ambient temperature and conditions while stored or used.
Conditions to avoid:
Do not exceed 200C (392F)
Materials to avoid:
Chlorite, hypochlorite (bleach), sulfites, strong bases, common metals.
Decomposition products:
Thermal decomposition of dried product can release irritating fumes.

SECTION 11. TOXICOLOGY INFORMATION

Toxicity:
Low order of acute toxicity
Oral (ingestion) estimate:
LD50/Oral Rat >2,000mg/kg (as aluminum)
Inhalation estimate:
LC50/Inhalation rat >5.6mg/l (as aluminum)
Dermal estimate:
LD50/dermal: >550mg/kg (as aluminum)
Effects of exposure:
Skin: Repeated contact may dry and irritate skin.
Eyes: Will cause irritation, untreated exposure may result in damage to the eye.
Respiratory: Inhalation of liquid or mist may cause bronchial irritation and coughing.
Mucous membranes: May cause irritation.
Ingestion: Can cause vomiting, pain and discomfort to mouth, throat, and stomach.
Sensitization: Not sensitizing
Carcinogenicity: NTP Not listed. IARC Not listed. OSHA Not listed.
Reproductive Toxicity, Mutagenic or teratogenic effects:
No known reproductive toxicity, mutagenic or teratogenic effects in animal experiments are known.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic toxicity:
With preapproval; Federal, State, Provincial, and EU regulators allow the direct application of aluminum salts into surface waters such as lakes, ponds, and streams for beneficial uses such as:
Phosphorus inactivation.
Cyanobacteria (Blue-Green Algae) control.
Turbidity reduction for improved water clarity.
Reported that at environmentally relevant pH range of 5.5-8.5 the solubility of aluminum is low. Aluminum salts dissociate with water resulting in rapid formation and precipitation of aluminum hydroxides. Aluminum salts must not be introduced into surface waters in an uncontrolled way. In aquatic environments at a pH <5.5 and >8.5 the direct addition of aluminum salts may result in soluble aluminum, and until a pH range of 5.5-8.8 is reached could demonstrate toxicity and be harmful to aquatic organisms.
For Polyaluminum chloride:
NOEC/Danio rerio/OECD test guideline 203: >1,000mg/l
LC50/96h/Danio rerio/OCED test guideline 203: >1,000mg/l
LC50: >0.156 mg/l as Al*. Maximum *soluble aluminum concentration under the test conditions
EC50/Daphnia magna (water flea) semi-static/OECD test guideline 202: 98mg/l
EC50: 24 mg/l as Al (aluminum)
Toxicity to other organisms: No data available.
Bioaccumulation potential: This product is not expected to bioaccumulate.
Octanol-water coefficient: NA, inorganic compound.
Biodegradability: Not applicable to inorganic substances.
Chemical degradability: In water at pH range of 5.5-8.8 precipitates of aluminum hydroxide are formed.
Mobility in Soil: No data available.

SECTION 13. DISPOSAL CONSIDERATIONS

RCRA Hazardous waste: Not listed.
Consult engineers if necessary.
Neutralization:
Product can be neutralized and converted to aluminum hydroxide using a mild alkali such as soda ash, calcium carbonate (agricultural lime). Neutralized residue can be swept up or rinsed down with water and captured using absorbent materials for reuse or disposal in accordance with local, state, province, and federal regulations. Consult engineers if necessary.
Special precautions:
None known
Container reuse:
Packaging and storage containers that cannot be thoroughly cleaned must be disposed of in accordance with local, state, province, and federal regulations. Consult engineers if necessary.

SECTION 14. TRANSPORTATION INFORMATION

Land (DOT), Sea (IMDG), Air (ICAO/IATA)
UN number: UN3082
Shipping name: environmentally hazardous substance inorganic N.O.S. (Polyaluminum Chloride)
Hazard class: 9
Packing group: III
Environmental hazards: Not a marine pollutant
Special precautions: None known

SECTION 15. REGULATORY INFORMATION

RCRA Hazardous waste: Not Listed. Consult engineers if necessary.
CERCLA Hazardous substance: Not listed CWA, Sec.311 (b) (4)
CERCLA Reportable Quantity (RQ): NA
SARA 311/312 Categories:
Acute (immediate) health effects: Yes
Chronic (delayed) health effects: No
Sudden release of pressure hazard: No
Reactivity hazard: No
SARA 313 Toxic Chemical listing: Not listed
SARA Extremely hazardous substance (EHS): Not listed
OSHA Air (29CFR 1910.10000, table Z-1, Z-1A): Not listed
OSHA Special Regulated Substance (29CFR 1910): Not listed
California prop 65 chemical: No
WHMIS: E corrosive
United States TSCA Section Inventory Status: Product exempt or listed on the TSCA Inventory.
Canada CEPA / Canadian Domestic Substances List (DSL):
All components of this product are included on the Domestic Substance List (DSL) or are not required to be listed (Canada ref. CAS# 1327-41-9).
State - Province regulations: State and Province specific regulations have not been determined by the Holland Company. Consult engineers if necessary.
Inventories: Chinese, Korean (ECL), Philippines (PICCS), Japanese (ENCS), European (EINECS), NZ.

SECTION 16. OTHER INFORMATION

NSF/ANSI 60 Drinking Water Treatment Chemicals:
Maximum use 325mg/L

Preparatory statement:
The information in this Safety Data Sheet (SDS) is correct to the best of our knowledge, information we have available, and belief as of the publication date. The information is designed solely as guidance for handling, storage, transportation, release, and disposal and is not to be considered a warranty or quality specification.

Date Sources for the SDS:
Literature, databases, practice, experience, publications, own tests, regulations

Revision:
June 2015 replaces all earlier
SDS ID: PCH180182906080015

Holland Company, Inc.
153 Howland Avenue
Adams, Massachusetts 01220
U.S.A.
800-639-9602

VITA-D-CHLOR™

Manufactured by:
Integra Chemical Co
1216 6th Ave N
Kent WA 98032
253.479.7000

SAFETY DATA SHEET

SDS Number: 26643, Revision 001
Revision date: July 9, 2014

24 Hour Emergency Response: CHEMTREC 800-424-9300
(Outside USA: 703-527-3887)

1. IDENTIFICATION

Product name: Vita-D-Chlor™
Chemical family: Organic acid
Product number: All Integra Chemical item numbers beginning with V322.50
Recommended use: Dechlorination
Restrictions on use: No information available

2. HAZARDS IDENTIFICATION

OSHA classification: Not a hazardous substance or mixture
Label elements & precautionary statements: Not applicable
Hazards not otherwise classified: None identified

3. COMPOSITION/INFORMATION ON INGREDIENTS

The organic acid contained in this product is not a hazardous material.

4. FIRST AID PROCEDURES

Skin contact: Wash with soap and water. Seek medical attention if irritation develops.
Eye contact: Flush eyes with plenty of water. If irritation persists, seek medical attention.
Inhalation: Remove to fresh air.
Ingestion: Do not induce vomiting. Rinse mouth. If adverse symptoms develop, seek medical attention.

5. FIRE-FIGHTING MEASURES

Extinguishing media: Water spray, carbon dioxide, dry chemical, or foam.
Special equipment/precautions: Use water to cool nearby containers and structures. Wear full protective equipment, including suitable respiratory protection.
Specific hazards: As with most organic solids, combustion is possible at elevated temperatures.
Hazardous combustion products: Oxides of carbon (CO, CO_2)

6. ACCIDENTAL RELEASE MEASURES

Spill procedures: Prevent spread of spill. Wear suitable protective equipment. Sweep or scoop into clean, dry disposal container. Flush spill area with water.

7. HANDLING AND STORAGE

Storage and handling: Store in a cool, dry, well-ventilated area away from incompatible materials. Keep containers tightly closed and protect them from physical damage. Protect from direct light and minimize contact with air.
Incompatible materials: Incompatible with strong acids, strong bases, strong oxidizers.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OSHA & ACGIH exposure limits: None established
Engineering controls: Use adequate general or local exhaust ventilation to keep fume and/or dust levels as low as possible.
Respiratory protection: None needed unless use generates annoying or irritating dusts, mists or vapors. Use a NIOSH approved respirator mask if necessary.
Skin & eye protective equipment: Safety glasses.
Facilities storing or utilizing this material should be equipped with an eyewash facility and safety shower.
Always handle material in accordance with good chemical handling, industrial hygiene, and safety practices.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Fine white crystals	Boiling point:	Not available
Odor:	No odor	Flash point:	Not available
Odor threshold:	Not available	Evaporation rate:	Not available
pH (1% aqueous solution):	2 to 3	Flammability:	Not available
Melting/freezing point:	192°C		

VITA-D-CHLOR™

Manufactured by:
Integra Chemical Co
1216 6th Ave N
Kent WA 98032
253.479.7000

SAFETY DATA SHEET

24 Hour Emergency Response: CHEMTREC 800-424-9300
(Outside USA: 703-527-3887)

9. PHYSICAL AND CHEMICAL PROPERTIES continued

Flammable or explosive Limits (% by volume in air)	Upper: Not available Lower: Not available	Solubility:	33g/100mL water @25°C
		Partition coefficient:	Not available
Vapor pressure:	Not available	Auto-ignition temperature:	660°C
Vapor density:	Not available	Decomposition temperature:	218°C
Relative density:	1.65	Viscosity:	Not available

10. STABILITY AND REACTIVITY

Reactivity:	No information available
Stability:	Stable
Possibility of hazardous reactions:	Hazardous polymerization will not occur
Conditions to avoid:	Exposure to light, air, moisture and high temperatures
Incompatibles:	Incompatible with strong acids, strong bases, strong oxidizers
Decomposition products:	Oxides of carbon (CO, CO_2)

11. TOXICOLOGICAL INFORMATION

Effects of overexposure:

Inhalation:	Inhalation may irritate the nose, throat and upper respiratory tract.
Skin contact:	Excessive contact may cause skin irritation.
Eye contact:	Contact may cause eye irritation.
Ingestion:	Ingestion of small amounts is not likely to produce harmful effects.
Chronic effects:	Chronic ingestion of large quantities may cause gastrointestinal effects including nausea, diarrhea, urine acidification, oxalate and uric crystallization in the bladder and kidneys, decreased reaction times, psychomotor coordination.
Target organs:	None identified
Additional effects:	No information available
Reproductive effects:	None identified
Carcinogenicity:	No listings by NTP, IARC, or OSHA
Toxicity data:	LD50 (oral, rat) 11,900 mg/kg

12. ECOLOGICAL INFORMATION

No information available

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all local, state and federal regulations.

14. TRANSPORTATION INFORMATION

Material is not classified as a dangerous good via either ground or air transportation.

15. REGULATORY INFORMATION

All components are listed in the United States TSCA inventory.
This product is not controlled under WHMIS

16. OTHER INFORMATION

FDA Recommended Dietary Allowance for ascorbic acid: 60mg/day
NSF60 maximum use: 12mg/L

OSHA SDS #: 26643, rev 001; July 9, 2014

VITA-D-CHLOR™

Home Products Equipment Kits Use Calculators

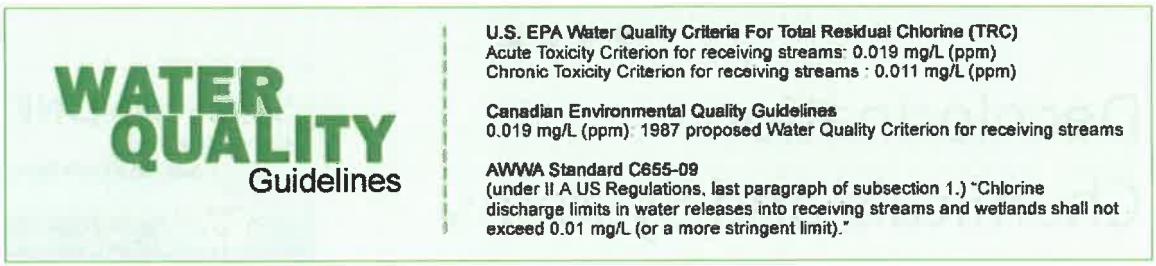
Technical Contact Us Promotions

Dechlorination Chemicals and Systems

Developed in response to The Clean Water Act and the Endangered Species Act, Vita-D-Chlor is safer than the sulfite chemicals traditionally used. Vita-D-Chlor is produced using Vitamin C (Ascorbic Acid) chemistry necessary for healthy fish. Vita-D-Chlor does not deplete oxygen levels, a concern when using sulfites. Vita-D-Chlor is used all over the continent for safe, fast, and efficient dechlorination, and offers operator safety and positive public acceptance.

Vita-D-Chlor and Vita-D-Chlor Neutral are NSF certified for treatment of drinking water. Vitamin C based chemistry makes them safe for neutralizing chlorine in water that is being discharged to the environment and other sensitive areas. Vita-D-Chlor and Vita-D-Chlor Neutral are both 100% organic, completely soluble, and provide a safe, rapid and complete method of dechlorination. These products completely neutralize both chlorine and chloramines.

Vita-D-Chlor is ideal for field dechlorination where treatment must be safe and immediate. Usage is simple: mix a solution and feed it into the flow stream of chlorinated water. As the feed solution disperses across the flow stream, the chlorine is neutralized. Feed solutions of Vita-D-Chlor or Vita-D-Chlor Neutral can also be added to contained water, such as a water truck or reservoir. Introducing it, before filling, generally gives it the necessary dispersal across the volume of water. Just one gram of either product will neutralize 1 ppm (mg/L) of chlorine in 100 gallons of water.



Products
Vita-D-Chlor Granular
Vita-D-Chlor Neutral
Vita-D-Chlor Tablets
Vita-D-Chlor Slo-Tabs

Kits
Zde-chlorinator KIT
deChlorinator KIT
LPD 250 KIT
Hydro-Hitch KIT
Dechlor Demon KIT

Equipment
Zde-chlorinator
deChlorinator
LPD 250 Steel or Aluminum
Hydro-Hitch, Aqua-D-Chlor
Dechlor Demon
Bazooka
Taby Mat
Tablet Sock
Test Strips
Emergency Kit

Use Calculators
Pipelines
Injectors
Reservoirs

Technical
SDSs
FAQs
Pros and Cons
Dechlorination Strategies
Resource Guide

Contact Us

Visit Our Online Store

Attachment E Engangered Species Act Eligibility Determination

To determine whether or not this discharge will impact endangered species, the City used the US Fish and Wildlife's iPaC website and generated a letter showing there are potentially two endangered species and no critical habitats located in the area of discharge.

The two endangered species will not be impacted by this discharge as follows:

1. Northern long-eared bat: threatened. This species doesn't live in the water and so is not expected to be impacted by the discharge.

2. Dwarf wedgemussel: endangered. According to Susi von Oettingen of US Fish and Wildlife, there are no populations of the dwarf wedgemussel in Beaver Brook and although there are some populations downstream of where Beaver Brook discharges to the Ashuelot River, those populations would not be affected.

   Further, the discharge has very low concentrations of very few pollutants and met the limits of the discharge permit.

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2560

Event Code: 05E1NE00-2018-E-06000

Project Name: Drinking Water Tank Discharge

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: Discharge of clean drinking water

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.92341089325488N72.27257838348478W

Counties: Cheshire, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Dwarf Wedgemussel *Alasmidonta heterodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Species determinations

For listed species

[1] not covered by determination keys, an impact analysis should be performed to reach a conclusion about how this project will impact the species. These conclusions will result in *determinations* for each species, which will be used in consultation with the U.S. Fish and Wildlife Service.

Mammals

Northern Long-eared Bat Myotis septentrionalis	None

Clams

Dwarf Wedgemussel Alasmidonta heterodon	None

Critical habitats

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.

Dwarf wedgemussel (Alasmidonta heterodon)

Range Information | Federal Register | Recovery | Critical Habitat | Conservation Plans | Petitions | Life History

Taxonomy: View taxonomy in ITIS

Listing Status: Endangered

Where Listed: WHEREVER FOUND

General Information

No description available.

The species historical range included Connecticut, Delaware, District of Columbia, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Vermont, Virginia. See below for information about where the species is known or believed to occur.

Current Listing Status Summary

Status	Date Listed	Lead Region	Where Listed
Endangered	03/14/1990	Northeast Region (Region 5)	Wherever found

» Range Information

Current Range

Wherever found

Zoom in! Some species' locations may be small and hard to see from a wide perspective. To narrow-in on locations, check the state and county lists (below) and then use the zoom tool.

Want the FWS's current range for all species? Click here to download a zip file containing all individual shapefiles and metadata for all species.

- **Wherever found**

  Listing status: Endangered

  - **States/US Territories** in which this population is known to or is believed to occur: Connecticut , Maryland , Massachusetts , New Hampshire , New Jersey , New York , North Carolina , Pennsylvania , Vermont , Virginia
  - **US Counties** in which this population is known to or is believed to occur: View All
  - **USFWS Refuges** in which this population is known to occur: Silvio O. Conte National Fish and Wildlife Refuge
  - **Countries** in which this population is known to occur: Canada, United States

» Federal Register Documents

Federal Register Documents

Show 10 entries

Date	Citation Page	Title
06/08/2011	76 FR 33334 33336	Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Reviews of Nine Sp Clubshell, Roanoke Logperch, Swamp Pink, Northern Riffleshell, Flat-spired Three-toot Beetle, Dwarf Wedgemussel, and Bog Turtle
04/21/2006	71 FR 20717 20718	Initiation of a 5-Year Review of Nine Listed Species: the Purple Bean (Villosa perpurpur clava), Northern Red-bellied Cooter (Pseudemys rubriventris bangsi), Roanoke Logperc Pink (Helonias bullata), Northern Riffleshell (Epioblasma torulosa rangiana), Flat-spired (Triodopsis platysayoides), Puritan Tiger Beetle (Cicindela puritana), and Dwarf Wedge heterodon)
03/14/1990	55 FR 9447 9451	ETWP; Determination of Endangered Status for the Dwarf Wedge Mussel; 55 FR 9447
04/17/1989	54 FR 15236 15240	ETWP; Proposed Endangered Status for the Dwarf Wedge Mussel; 54 FR 15236 15240

Showing 1 to 4 of 4 entries

< Previous 1 Next >

» Recovery

- Recovery Plan Information Search
- Information Search FAQs

Current Recovery Plan(s)

Show 10 entries

Date	Title	Plan Action Status	P
02/08/1993	Dwarf Wedge Mussel	View Implementation Progress	

Showing 1 to 1 of 1 entries

< Previous 1 Next >

Other Recovery Documents

Show 10 entries

Date	Citation Page	Title	D
06/08/2011	76 FR 33334 33336	Endangered and Threatened Wildlife and Plants; Initiation of 5-Year Reviews of Nine Species: Purple Bean, Clubshell, Roanoke Logperch, Swamp Pink, Northern Riffleshell, Flat-spired Three-toothed Land Snail, Puritan Tiger Beetle, Dwarf Wedgemussel, and Bog Turtle	
04/21/2006	71 FR 20717 20718	Initiation of a 5-Year Review of Nine Listed Species: the Purple Bean (Villosa perpurpurea), Clubshell (Pleurobema clava), Northern Red-bellied Cooter (Pseudemys rubriventris bangsi), Roanoke Logperch (Percina rex), Swamp Pink (Helonias bullata), Northern Riffleshell (Epioblasma torulosa rangiana), Flat-spired Three-toothed Land Snail (Triodopsis platysayoides), Puritan Tiger Beetle (Cicindela puritana), and Dwarf Wedgemussel (Alasmidonta heterodon)	

Showing 1 to 2 of 2 entries

< Previous 1 Next >

Five Year Review

Show 10 entries

Date	Title
04/17/2013	Dwarf wedgemussel (Alasmidonta heterodon) 5-year review: summary and evaluation
07/25/2007	Dwarf Wedgemussel 5-Year Review

Showing 1 to 2 of 2 entries

< Previous 1 Next >

» Critical Habitat

No critical habitat rules have been published for the Dwarf wedgemussel.

» Conservation Plans

No conservation plans have been created for Dwarf wedgemussel.

» Petitions

Show 10 entries

Showing 1 to 1 of 1 entries

< Previous 1 Next >

» Life History

No Life History information has been entered into this system for this species.

» Other Resources

NatureServe Explorer Species Reports -- NatureServe Explorer is a source for authoritative conservation information on more than 50,000 plants, animals and ecological communtities of the U.S and Canada. NatureServe Explorer provides in-depth information on rare and endangered species, but includes common plants and animals too. NatureServe Explorer is a product of NatureServe in collaboration with the Natural Heritage Network.

ITIS Reports -- ITIS (the Integrated Taxonomic Information System) is a source for authoritative taxonomic information on plants, animals, fungi, and microbes of North America and the world.

FWS Digital Media Library -- The U.S. Fish and Wildlife Service's National Digital Library is a searchable collection of selected images, historical artifacts, audio clips, publications, and video.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
http://www.fws.gov/newengland

In Reply Refer To:
Consultation Code: 05E1NE00-2018-SLI-2560
Event Code: 05E1NE00-2018-E-06000
Project Name: Drinking Water Tank Discharge

July 30, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2018-SLI-2560

Event Code: 05E1NE00-2018-E-06000

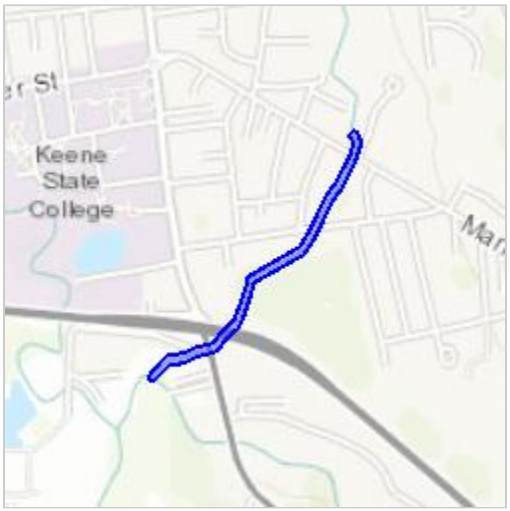
Project Name: Drinking Water Tank Discharge

Project Type: STREAM / WATERBODY / CANALS / LEVEES / DIKES

Project Description: Discharge of clean drinking water

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/42.92341089325488N72.27257838348478W



Counties: Cheshire, NH

Endangered Species Act Species

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Dwarf Wedgemussel *Alasmidonta heterodon* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/784	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Attachment F

Supplemental Information for Section H: National Historic Preservation Act Eligibility Determination

Using the New Hampshire Division of Historical Resources website, a list of historic places in Keene was generated as follows:

Keene

143 Daniels Hill Road	Noah Cooke House and archeological site	KEE0020	07/29/2002
199 Main Street	Horatio Colony House Museum	KEE0231	10/28/2012
63 Arch Street	Sawyer Tavern	KEE0194	10/29/07
75 Winter Street	John Bowker House	KEE0183	10/20/06
95 Main Street	Colonial Theatre	KEE0174	7/26/2004
Castle Street (former 11 Island Street)	Island Street Mill Building	KEE0011	04/29/2002
Castle Street (former 272 West Street)	West Street Mill Building	KEE0010	04/29/2002
Cheshire Railroad over the Branch River, mm 89.41	Stone Arch Bridge, Cheshire Railroad	KEE0182	10/30/2006

None of these properties is located on Beaver Brook, or on the path of the discharge.

Attachment G

City of Keene

3 Washington Street New Hampshire 03431

Water Treatment Facility
August 1, 2018

U.S. EPA Region 1
5 Post Office Square, Suite 100/OEP06-1
Boston, Massachusetts 02109-3912

This statement is in response to section 2.5.2 Best Management Practices of the NOI. A Best Management Practice Plan (BMPP) was not developed as this was an emergency discharge. The discharge consisted of approximately 1.2 million gallons of dechlorinated potable water. The water storage tank was tested and the results submitted to EPA prior to discharge. After the initial samples the list of parameters to be tested at the 10%, 50% and 90% level were reduced to zinc, chloride and total residual chlorine. Staff monitored pH and residual chlorine via its online instrumentation.

Discharge to the above ground storm water system was regulated using a valve and staff was able to calculate the discharge volume using the tank level and time. Staff monitored the storm water system in multiple locations after opening the valve and no erosion of the storm water system was observed. Staff also monitoring the discharge point to the receiving stream multiple times during the discharge event and no erosion or disruption to the receiving water occurred during discharge. No solids silt or sediment from the bottom of the tank was discharged.

Sincerely,

Aaron Costa
Operations Manager

Area Code 603
Phone
Airport 357-9835 • Assessment 352-2125 • City Attorney 357-9806 • City Clerk 352-0133 • Code Enforcement 352-5440 • Facility Maintenance 357-9844 Fleet Services 357-9831 • Fire 357-9861 • Finance 352-1013 • Health 352-5440 • Human Resources 357-9858 • Human Services 357-9809 • Information Management Services 357-9802 • Library 352-0157 • Mayor 357-9804 • Manager 357-9804 • Recycle Center/Transfer Station 352-5739 • Parks, Recreation & Facilities 357-9829 • Planning 352-5474 • Police 357-9815 • Public Works 352-6550 • Purchasing 357-9800 • Revenue Collection 357-9801 Water Treatment Facility 357-8483 • Wastewater Treatment Plant 357-9836 • Water & Sewer 352-3239 • Youth Services 357-9810
FAX
Airport 357-9853 • Assessment 357-9857 • City Clerk 357-9884 • City Hall 357-9847 • Fire 358-3420 • Recycle Center/Transfer Station 352-8325 Revenue Collection 357-9898 • Library 352-1101 • Parks, Recreation & Facilities 357-9859 • Police 357-9823 • Public Works 357-9848 Water Treatment Facility 358-1008 • Wastewater Treatment Plant 357-9854
Website
www.ci.keene.nh.us