ATTACHMENT A:

UNIT OR SITE-SPECIFIC COVID-19 PREVENTION PLAN TEMPLATE

Iniversity units are required to document their workplace COVID-19 prevention measures and review them with personnel. This template ıay be used for that purpose and used at a work-site level or department level as appropriate for the unit. If an alternative format is used e.g., Return to In-Person Research Plan), it must include all six required elements for a plan and align with University policies and rocedures (e.g., daily symptom attestation).

Date: July 31, 2020	Completed By: Debbie Carnes
Name of COVID-19 Site-Supervisor: Kameron Harmon (alternate Debbie Carnes)	
Unit Name: Chemical Engineering	Worksite Location(s): Benson Hall, MolES, NanoES, Benjamin Hall
Unit COVID-19 Prevention Plan and Plan Location: 3781 Okanogan Lane NE, Benson Hall Room 105, Seattle, WA 98195-1750	

MANAGEMENT AND OVERSIGHT	Check all that apply (all required):	Describe:
1. COVID-19 Prevention Plan and Site-Supervisor	☐ A COVID-19 supervisor is assigned to ensure all of the elements of the site-specific COVID-19 Prevention Plan are followed. ☐ The COVID-19 site supervisor will keep the site-specific plan updated and current with changes to COVID-19 guidelines, regulations and University policies. ☐ The COVID-19 site supervisor will keep the site-specific plan onsite in paper or electronically so it is available to all personnel. ☐ The COVID-19 site supervisor will train personnel on the contents of the plan and updates made.	Kameron Harmon is the appointed COVID-19 supervisor for Benson Hall. During work activities, he may be contacted via phone: 206-543-4364 or harmok@uw.edu. Alternate Debbie Carnes available at 206-685-8364 or drae@uw.edu. See Appendix A "Site Supervisor Master List" for lab-specific Site Supervisors.

	☐ The COVID-19 site supervisor or designee is available to respond to issues and questions during work and class activities.	Employees are required to take the UW COVID-19 Safety Training: Back to the Workplace. The current ChemE COVID-19 Prevention Plan and lab-specific COVID-19 plans will be available on the department Covid-19 Information and Resources webpage and updated as necessary. We encourage you to direct any questions you have to the COVID-19 supervisor, Kameron Harmon, or to the lab-specific site-supervisors, see Appendix A. Our training logs for the ChemE COVID-19 Prevention Plan will be managed through a google form that requires each person to attest that they have read the document. The log for this training will be managed by department staff. People will be required to take lab-specific training prior to the first on-site work day. For training required to be done in person, training will be done while maintaining social distance and will be staggered to support this requirement. The Chair has delegated compliance and

		tracking of UW COVID-19 Safety Training and lab-specific training to department supervisors. Supervisor's must manage and keep a log of the UW COVID-19 Safety Training and lab-specific training for all personnel before they are allowed back in Benson Hall (supervisors can verify the UW training here). Retraining will be performed whenever ChemE COVID-19 Prevention Plan or associated SOPs are updated.
-*SOCIAL AND PHYSICAL DISTANCING	**Check all that apply (all required as possible):**	**Describe:**
2. Describe how you are implementing the social distancing requirements (maintaining 6+ feet spacing between people, minimizing interpersonal contact).	☐ Telework options offered ☐ Shifts/breaks times/start times staggered ☐ Maximum space capacity determined based on room size ☐ In-person meetings (conference call, virtual) limited ☐ Non-critical in person meetings postponed ☐ Spread out work areas/physically separate workstations ☐ Allowing only infrequent/intermittent passing within 6 feet in between personnel ☐ Minimizing the number of people in a work area ☐ Designated drop-off/pick-up areas for shared tools and equipment	All faculty, staff, and students will continue to telecommute unless tasks require on-site resources or equipment that cannot be taken home. Individual lab-specific plans incorporate social distancing requirements within ChemE lab spaces (see lab-specific plans on the Covid-19 Information and Resources webpage). All research tasks that

	☐ Barriers to block direct pathways between individuals are installed ☐ Layouts to prevent air pathways less than 6 feet have been created ☐ Ensuring good ventilation in work areas ☐ Tasks have been rescheduled ☐ Work tasks have been modified ☐ Organizing work tasks to facilitate social distancing	can be performed via telework will be done that way. On-site activities will be staggered on different days and times. Timing will be scheduled and coordinated through lab-specific google calendars for researchers and a Benson Hall general occupancy google calendar for everyone else. Temporary occupancy limits will be enforced with only a single person per "work area" designated in the floor plans in Appendix B. Other rooms in Benson Hall with restricted occupancy include: • Room 105: max of 5 people • Room 109: max of 6 people • Room 111: max of 2 people • Room 303: max of 4 people • Room 303D: max of 1 person • Room 320A: max of 1 person • All restrooms: max of 1 person Before entering a restroom, knock on the door to ensure that it is not occupied. If occupied, stand back from the door at a safe social distance and wait until the person exits the restroom before entering. If you enter a restroom and become

		aware that someone is in there, please exit the restroom until they leave. No in-person group meetings will be held on campus. All meetings will continue to be conducted remotely (eg. Zoom, MS Teams). The lobby furniture has been removed to deter social gatherings in that area. In addition, the undergraduate lounge has been closed until further notice. The alcove space on the 2nd and 3rd floor are also closed. Drinking fountains on all floors are also closed. Remember to social distance when on breaks and at the shift start and end times. Social distance should be maintained when using the picnic tables outside the building. Hallways in Benson Hall are wide, allowing for social distancing if you walk close to the wall on either side as you pass someone else. Entrances allow both in and out traffic because there is enough space around entryways for you to watch for people on the other side

		and appropriately social distance from them, as needed. Stairwells are directionally labeled because they are not wide enough to allow social distancing. The stairwell next to the elevator is up traffic only and the stairwell near the NE entrance is for down traffic only. Only one person is allowed in the elevator at a time. Package pick up in Benson 105 happens by appoint only (coordinated with Kameron Harmon or other staff) and only allows one-at-a time access for pick-ups. Those picking up packages should stay on the far side of the reception desk with staff 6 feet or more away on the other side of the desk (see Appendix B).
3. Describe how you are communicating social distancing requirements to personnel, students,	☐ Posters/signage/floor markings installed or posted ☐ Communicating during staff meetings ☐ Email communication ☐ Establishing policies and procedures ☐ Providing notice to vendors/contractors	Reading this document serves as your training on the new policies and procedures defined by the UW and the department. A log of the ChemE COVID19 Prevention Plan will be kept on the google shared drive ***ChemE Covid-19 Response***.

vendors, contractors and visitors.		When you have read the ChemE COVID19 Prevention Plan you must log the training using this google form, if you have a UW Net ID, and this form if you do not. Form submissions will be kept as a log of those who have been trained and its timestamp. Training protocols for various lab-specific plans vary, but all include detailed plans about communicating social distancing requirements. Vendors will be emailed the link to the ChemE COVID19 Prevention Plan before they enter the building. They will then submit the appropriate google form confirming that they have read the unit training plan. Posters reminding people of prevention measures are posted throughout the building in common spaces, in restrooms, and at entrances. During this time vendors or visitors will be allowed on-site only after reading the ChemE COVID19 Prevention Plan, COVID-19 attestation google form, and

		receiving approval from the COVID-19 Supervisor.
4. Describe critical tasks **not possible** to be done while maintaining the 6-foot distance. Unit head pre-approval required.	Describe task, frequency, duration and required PPE and safety measures in place. If none, specify none. None	
PRECAUTIONS FOR SICK PERSONNEL	**Check all that apply (all required as possible):**	**Describe:**
5. Describe how you are preventing people with symptoms from coming to the site and/or working while sick.	☐ Performing daily symptom screening or attestation for personnel who work on-site at a UW work location ☐ Following UW policies for time away from work ☐ Informing and requiring personnel who may be ill or symptomatic to stay (or go) home ☐ Requiring close contacts of COVID-19 cases to stay or go home ☐ Consulting with EH&S Employee Health Center ☐ Discussing accommodations for personnel at higher risk of severe illness with your HR Consultant or DSO for academic personnel ☐ Keeping a log of visitors to the work-site (maintain for 4 weeks)	If you are on-site you must complete a daily symptom attestation through Workday, if you are an employee, or through this google form, for everyone else. People are to self-monitor for symptoms and remain home (or go home) if any symptoms are noted.

6. Describe the practices for responding to suspected or confirmed COVID-19 cases.	☐ Informing personnel with **COVID-19 symptoms** to stay home, contact their healthcare provider and to notify the Employee Health Center ☐ Informing personnel **with suspect or confirmed COVID-19** to stay home and notify the Employee Health Center ☐ Informing personnel who have had **close contact** with someone with COVID-19 to stay home and notify the Employee Health Center ☐ Performing enhanced cleaning and disinfection	Stay informed about UW policies on COVID-19 symptoms by reviewing this website. In particular: • People are advised to stay home and self-isolate (ie. telecommute) for two weeks after close contact with known or suspected COVID 19 cases. • People are advised to notify the Employee Health Center if they suspect or have confirmed infection with COVID-19. • Personnel are required to report to a University Employee Health Center: suspected or confirmed cases of COVID-19 or close contacts with individuals who have COVID-19. A log of all people working on site will be kept and shared with department staff (via google calendars), including critical employees, one-time visitors, and vendors. This information helps to insure population densities remain low and to aid with contact tracing should the need arise.

		If someone with a suspected or confirmed case of COVID-19 has been on site the necessary sections of the building will close for additional cleaning and disinfection per part 2 of EH&S Enhanced Cleaning and Disinfection Protocols.
CLEANING AND DISINFECTING	**Check all that apply (all required):**	**Describe:**
7. Describe the procedures used to clean and disinfect general areas and high-touch surfaces. This includes the cleaning frequency and areas/items to be cleaned.	☐ Following a cleaning schedule ☐ Cleaning supplies are available for spot cleaning ☐ Cleaning and disinfecting high touch surfaces daily, between uses or when unclean ☐ Wiping down shared equipment/objects after each use (e.g., door/refrigerator/microwave handles) ☐ Following COVID-19 Enhanced Cleaning and Disinfection Protocols	Increased cleaning and disinfection procedures are implemented: • Clean and disinfect the following surfaces you touch after every use (cleaning materials provided by the department): 1. Grad Breakroom, Benson B51 2. Faculty/Staff Breakroom, Benson 111 3. Mail/Copier Room, Benson 101 4. Copier Room, Benson 320A • Always clean and disinfect shared items, such as tools and computers, immediately after use. Disposable nitrile gloves will be used when touching any shared equipment/surface that cannot be easily cleaned and disinfected

		For further information, refer to EH&S Enhanced Cleaning and Disinfection Protocols. Custodial Services is cleaning Benson Hall once a day, sometimes twice a day – focusing on high touch areas.
8. List the product(s) used to clean and disinfect.	***Check all that apply:*** ☐ Alcohol solution with at least 70% alcohol (includes wipes) ☐ 10% bleach/water solution ☐ EPA-registered disinfectant for use against SARS-CoV-2: a. Manufacturer:_____ b. Name: _____ c. EPA Registration #:_____	Cleaning and disinfecting of surfaces will be performed using either an alcohol solution with at least 70% ethanol or 10% bleach/water solution. Paper towels, provided by custodial in the breakrooms, can be used for cleaning. Paper towels are provided by the department in the copier rooms.
9. Describe the safety precautions that are taken when using disinfectant(s).	☐ Reviewing safety data sheet (SDS) for each product ☐ Reviewing COVID-19 Chemical Disinfectant Safety Information ☐ Following manufacturer's instructions for products use ☐ Using personal protective equipment	When disinfecting, use disposable nitrile gloves and maintain proper ventilation. Avoid splash potential and perform a secondary water rinse to minimize potential hazards. Refer to the UW chemical disinfectant safety worksheet for further information. Safety Data Sheets for all products used by the department are provided in Appendix C.

GOOD HYGIENE	Check all that apply (all required):	Describe:
10. Describe methods used to encourage good hygiene practices.	☐ Providing soap and running water ☐ Providing hand sanitizer and/or wipes/towelettes ☐ Asking personnel to avoid touching others ☐ Using reminders to wash hands frequently, correctly at key moments, avoid touching face with unwashed hands, cover mouth when coughing or sneezing	Soap and hot/cold water are available in restrooms located on each floor. Alcohol based hand sanitizer is provided at entrances with key access, at the loading dock and at the NE corner of Benson Hall. Posters will be displayed throughout the labs and restrooms to remind people to wash hands frequently, avoid touching one's face, and cover one's mouth when coughing or sneezing.
PERSONAL PROTECTIVE EQUIPMENT	**Check all that apply:**	**Describe:**
11. Provide personal protective equipment (PPE) and guidance on how to use it.	☐ Face shields and/or eye protection is worn. ☐ Respirators are worn. ☐ Surgical/medical masks are worn. ☐ Face coverings (cloth) are worn indoors when others are in the work area and outdoors when a 6 foot distance from others cannot be maintained. ☐ Providing instructions on the use, care, cleaning, maintenance, removal, and disposal of PPE	Everyone is required to wear a face covering when in Benson Hall. It is recommended that you do not take off your mask unless you are in a room alone with the door closed. When using disinfectants wear disposable gloves. Gloves should not be reused and should be discarded in a trash receptacle after each use.

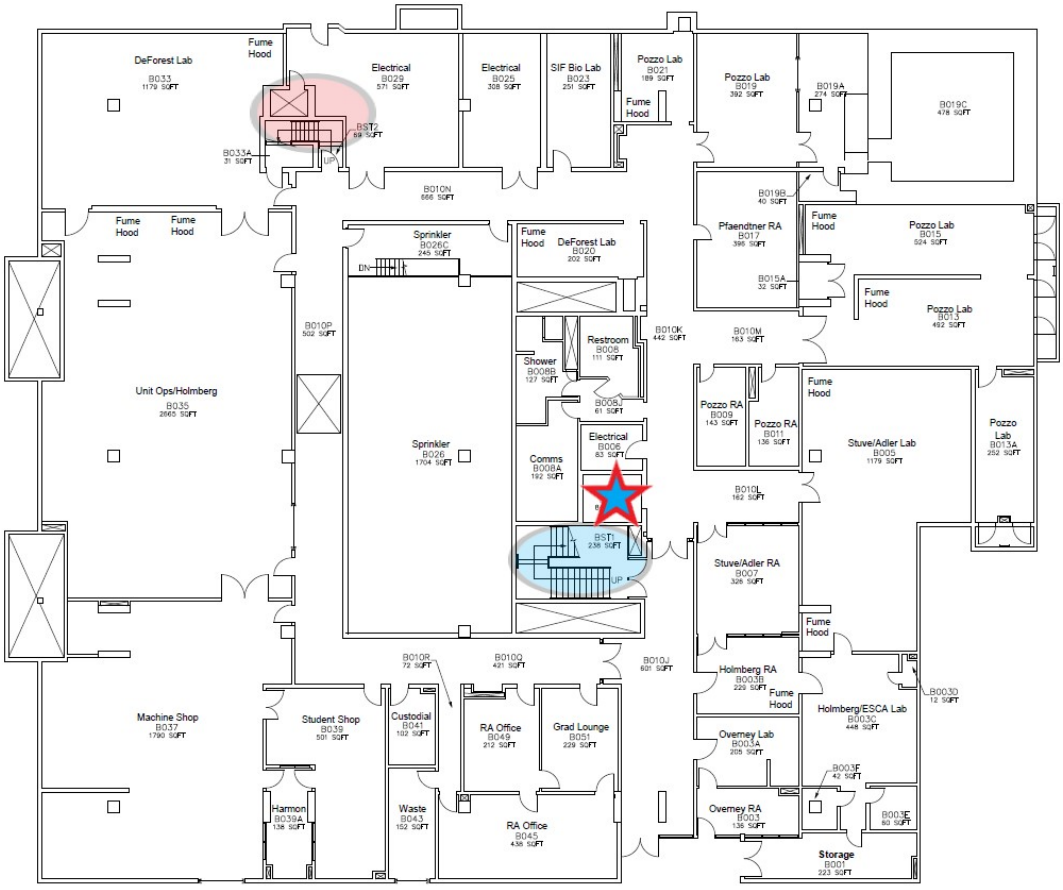
COMMUNICATION AND TRAINING	Check all that apply (all required):	Describe:
12. Communicate safe practices.	☐ Personnel completing UW general COVID-19 Safety Training ☐ Providing documented safety training to personnel on site-specific COVID-19 Prevention Plan initially and updates communicated ☐ Posters/signage installed and/or posted in the worksite ☐ Email communications ☐ Covering COVID-19 safety information in staff meetings ☐ Sharing information from the UW Novel coronavirus & COVID-19: facts and resources webpage	Before entering Benson Hall, do the following: • View the UW COVID-19 Safety Training • Read the ChemE COVID19 Prevention Plan and log your completion in the appropriate google form • If your destination is a specific lab, obtain training for that space from the appropriate Covid-19 Site Supervisor. • Complete daily attestations in Workday (employees) or Google Form (non-employees). • Create an appointment for the day you are on campus on one of the department or lab-specific google occupancy calendars. • Bring your face covering (face shields are not permitted as substitutes for face coverings). It's best to find a private area (a room, where you are alone, with a door you can close) to eat and drink in Benson Hall.

		As described in other sections, posters will be displayed throughout Benson Hall to remind people about COVID-19 procedures and policies. This plan, as well as any changes to other procedures, will be disseminated to the group via email as soon as available and approved. Bi-weekly emails will be distributed to critical employees highlighting various parts of the plan.
13. Communicate hazards and safeguards to protect personnel.	☐ Providing information about working safely with disinfectants ☐ Communicating the hazards and safeguards required to protect individuals from exposure	When using disinfectants wear disposable gloves. It is recommended that the disinfectant be applied to the cloth and wiped on when dealing with electronics and other sensitive equipment. Gloves should not be reused and should be discarded in a trash receptacle after each use. Clean hands immediately after gloves are removed. Use care to keep disinfectants away from your eyes, skin, and mouth. See more details on hazards in Appendix C – Safety Data Sheet (Clorox & Ethanol).

Appendix A - Site Supervisor Master List

Site Supervisers	Email	Phone	Primary/Alternate	Unit/Lab	Rooms	Title	Building
Pyka, Anthony	pykachu6@uw.edu	(C) 858-382-5353	Primary	Site Specific Supervisor - Adler/Stuve Lab	BENSON B5,B7	PhD Student	Benson Hall
Baneyx, Francois	baneyx@uw.edu	(W) 206-685-7659	Primary	Site Specific Supervisor - Baneyx Lab	BENSON 127,129,129A,129B,129C NANO 280,292,293,G91	Professor	Benson Hall
Berg, John	spc@uw.edu	(W) 206-543-2029 (H) 206-522-7957 (C) 206-507-5237	Primary	Site Specific Supervisor - Berg Lab	BENSON 201,205,205A,222,227	Professor	Benson Hall
Carothers, James	jcaroth@uw.edu	(W) 206-221-4902	Primary	Site Specific Supervisor - Carothers Lab	MOLES 320,322,330,340,340A-1,340B-3	Associate Professor	MolES
Ruskowitz, Emily	ruskowit@uw.edu	(C) 702-375-9453	Primary	Site Specific Supervisor - DeForest Lab	BENSON B20,B23,B33,B33A,B45,B49	Postdoc	Benson Hall
Hillhouse, Hugh	h2@uw.edu	(W) 206-685-5257 (C) 765-532-2280	Primary	Site Specific Supervisor - Hillhouse Lab	MOLES 123,140,140B,G21	Professor	MolES
Bishop, Brittany	bbishop3@uw.edu	(C) 617-519-8437	Primary	Site Specific Supervisor - Holmberg Lab	BENSON B3B,B3C,B3D,B3E,B3F,B45 MOLES 140	PhD Student	Benson Hall MolES
Jenekhe, Sam	jenekhe@uw.edu	(W) 206-543-5525 (C) 206-290-2778	Primary	Site Specific Supervisor - Jenekhe Lab	BENSON 301,336,338,341	Professor	Benson Hall
Tran, Duyen	kdtran17@uw.edu	(C) 408-637-8595	Alternate	Site Specific Supervisor - Jenekhe Lab	BENSON 301,336,338,341	PhD Student	Benson Hall
Wu, Kan	kw50@uw.edu	(C) 206-519-7860	Primary	Site Specific Supervisor - Jiang Lab	BENSON 311,315,317,320,320B, 321,327,329,331,333,335,337,339,340,347	PhD Student	Benson Hall
Lidstrom, Mary	lidstrom@uw.edu	(W) 206-685-1751	Primary	Site Specific Supervisor - Lidstrom Lab	BENJAMIN 400F,400J,400M,400N,408C,408D, 409,409A,409B,417A,417B,417C,417D,419,419A, 422,423,424,425,427,427A,427B,432,435,435A, 436,436A,437,438,440,443A,443B, 449,450,451,452,453,454,455,456,457,461	Professor	Benjamin Hall
Liao, Rick	rickliao@uw.edu		Alternate	Site Specific Supervisor - Nance Lab	BENSON 211,215,219,220,220A,220B, 239,254,256,256A	PhD Student	Benson Hall
Nance, Elizabeth	eanance@uw.edu	(W) 206-543-2216 (C) 704-560-2825	Primary	Site Specific Supervisor - Nance Lab	BENSON 211,215,219,220,220A,220B, 239,254,256,256A	Assistant Professor	Benson Hall
Jorgenson, Ty	tylerjor@uw.edu	(C) 406-240-3355	Alternate	Site Specific Supervisor - Overney Lab	BENSON B3,B3A,B49,319	PhD Student (MolES)	Benson Hall
Overney, Rene	roverney@uw.edu	(W) 206-543-4353	Primary	Site Specific Supervisor - Overney Lab	BENSON B3,B3A,B49,319	Professor	Benson Hall
Pozzo, Lilo	dpozzo@uw.edu	(W) 206-685-8536	Primary	Site Specific Supervisor - Pozzo Lab	BENSON B13,B13A,B15,B15A,B19,B21	PhD Student	Benson Hall
Creason, Sharon	screason@uw.edu	(W) 206-616-3704	Primary	Site Specific Supervisor - Ratner Lab	BENSON 313,309	Research Scientist	Benson Hall
Caldwell, Kyle	kcal@uw.edu	(W) 206-543-8786	Primary	Site Specific Supervisor - SIF Lab	BENSON 121,123	SIF Manager	Benson Hall
Chen, Emerson	syc2017@uw.edu	(C) 402-512-3493	Primary	Site Specific Supervisor - Yu Lab	BENSON 213,231	PhD Student	Benson Hall
Carnes, Debbie	drae@uw.edu	(W) 206-685-8364 (C) 206-618-4054	Alternate	Unit Site Supervisor	Benson Hall excluding PI Labs	ChemE Administrator	Benson Hall
Harmon, Kameron	harmok@uw.edu	(W) 206-543-4364	Primary	Unit Site Supervisor	Benson Hall excluding PI Labs	ChemE Facilities Manager	Benson Hall

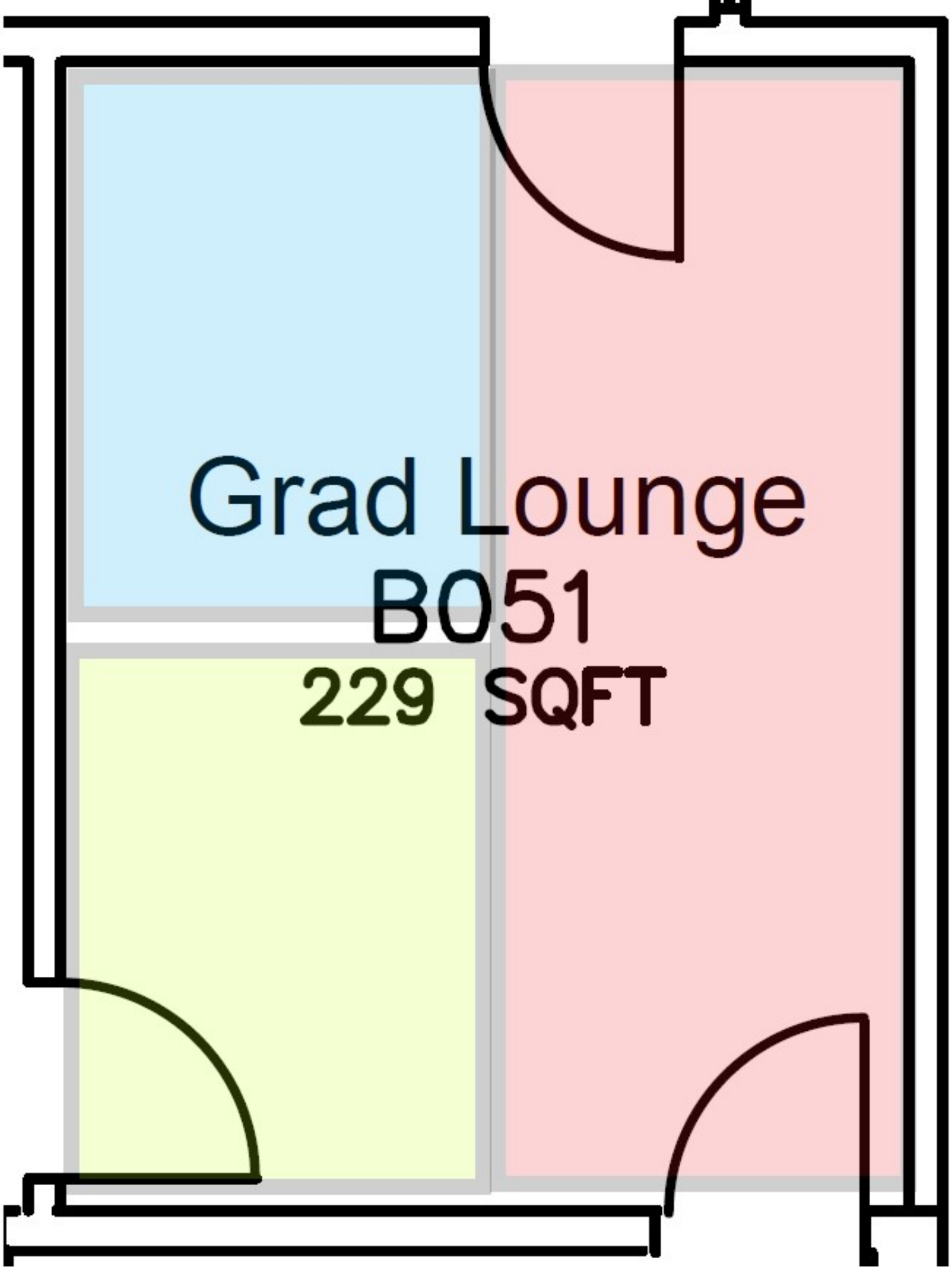
Benson Hall Basement



Single Occupancy

Up Traffic Only

Down Traffic Only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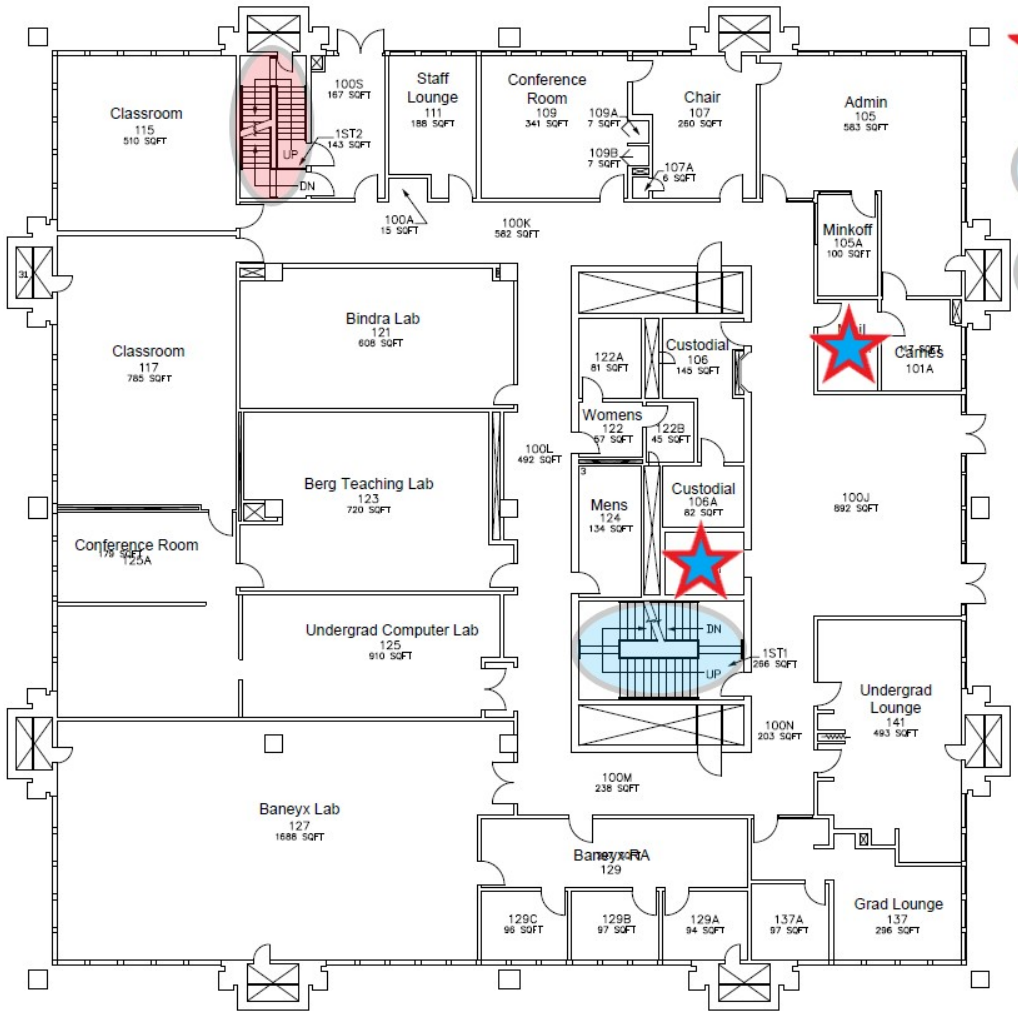
B051
229 SQFT

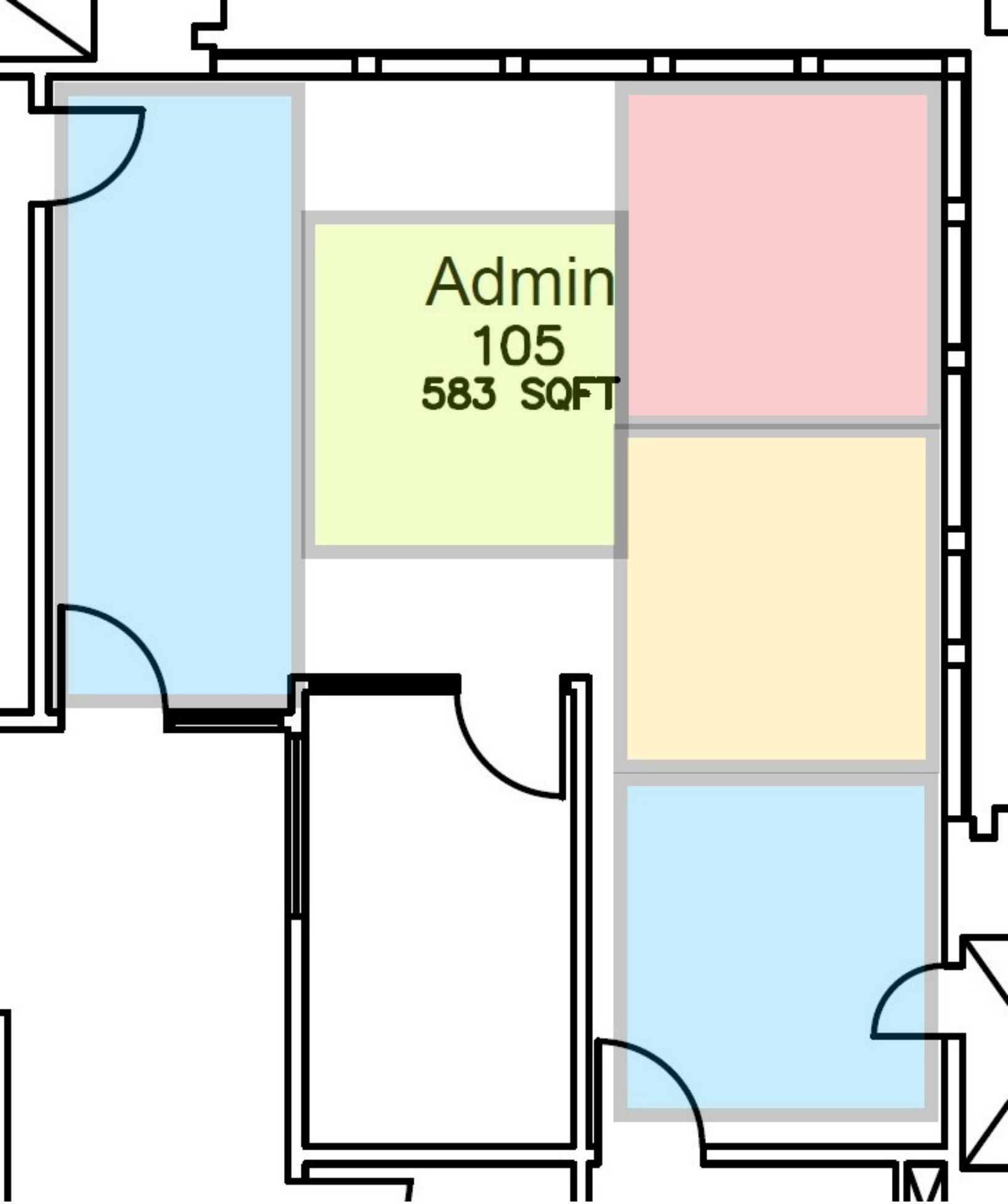
Benson Hall 1st Floor



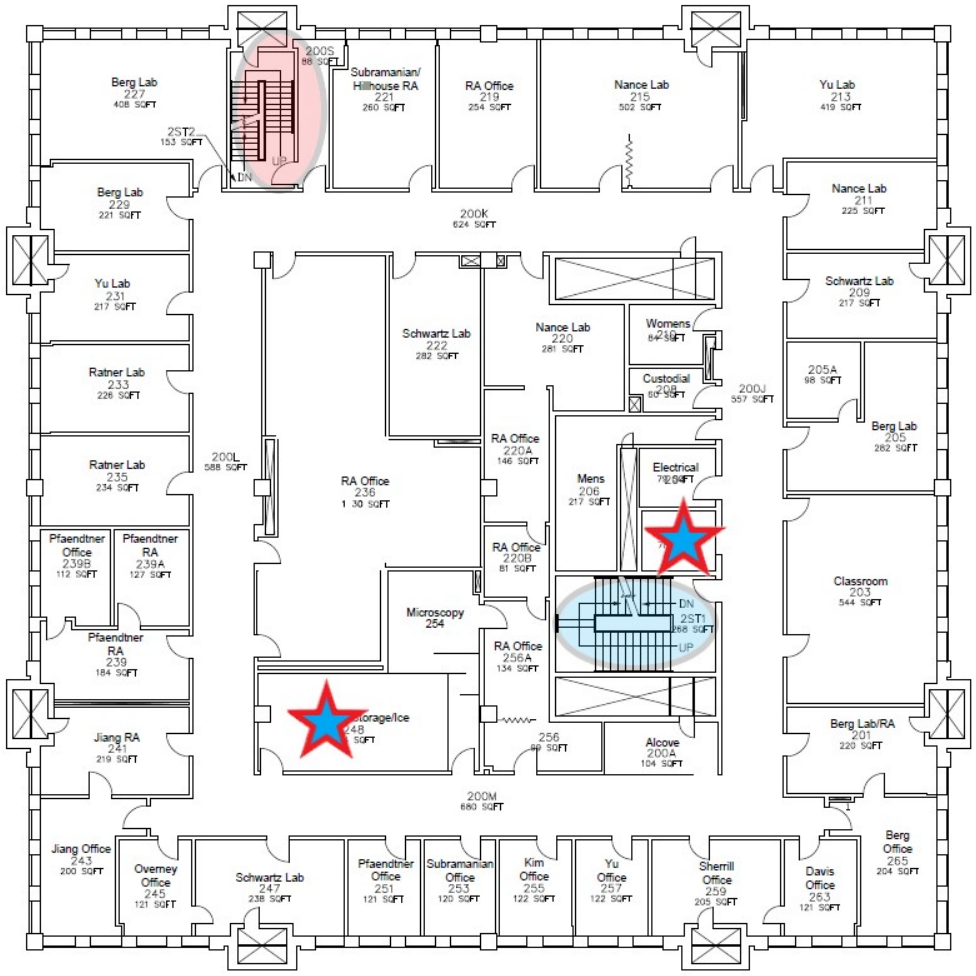
Single Occupancy

Up Traffic Only

Down Traffic Only


Admin
105
583 SQFT

Benson Hall 2nd Floor

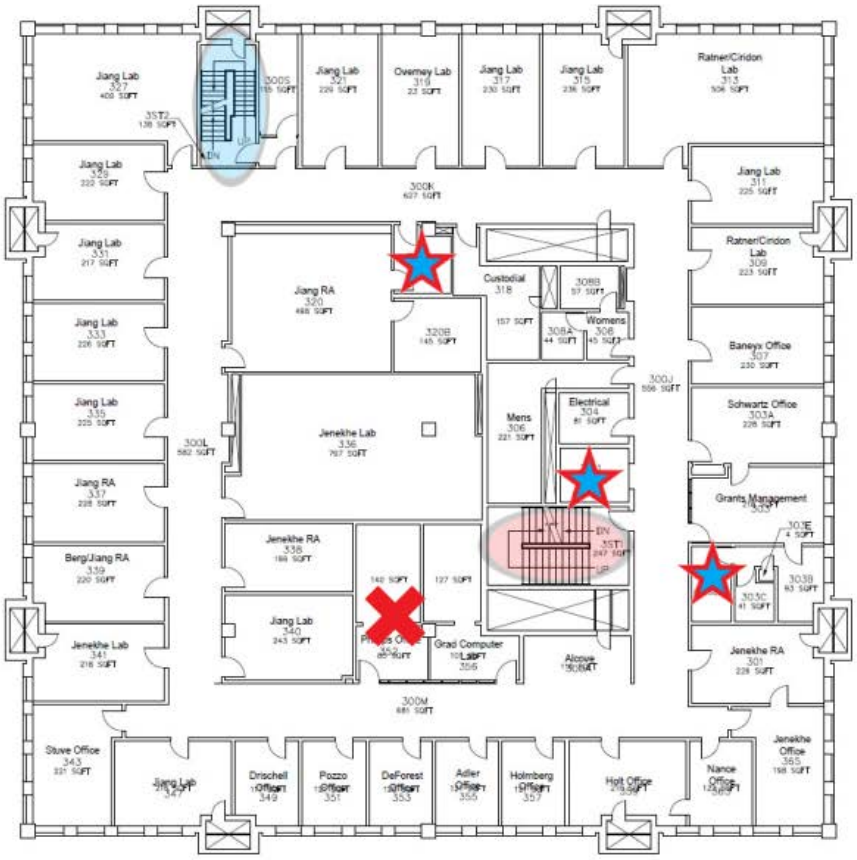


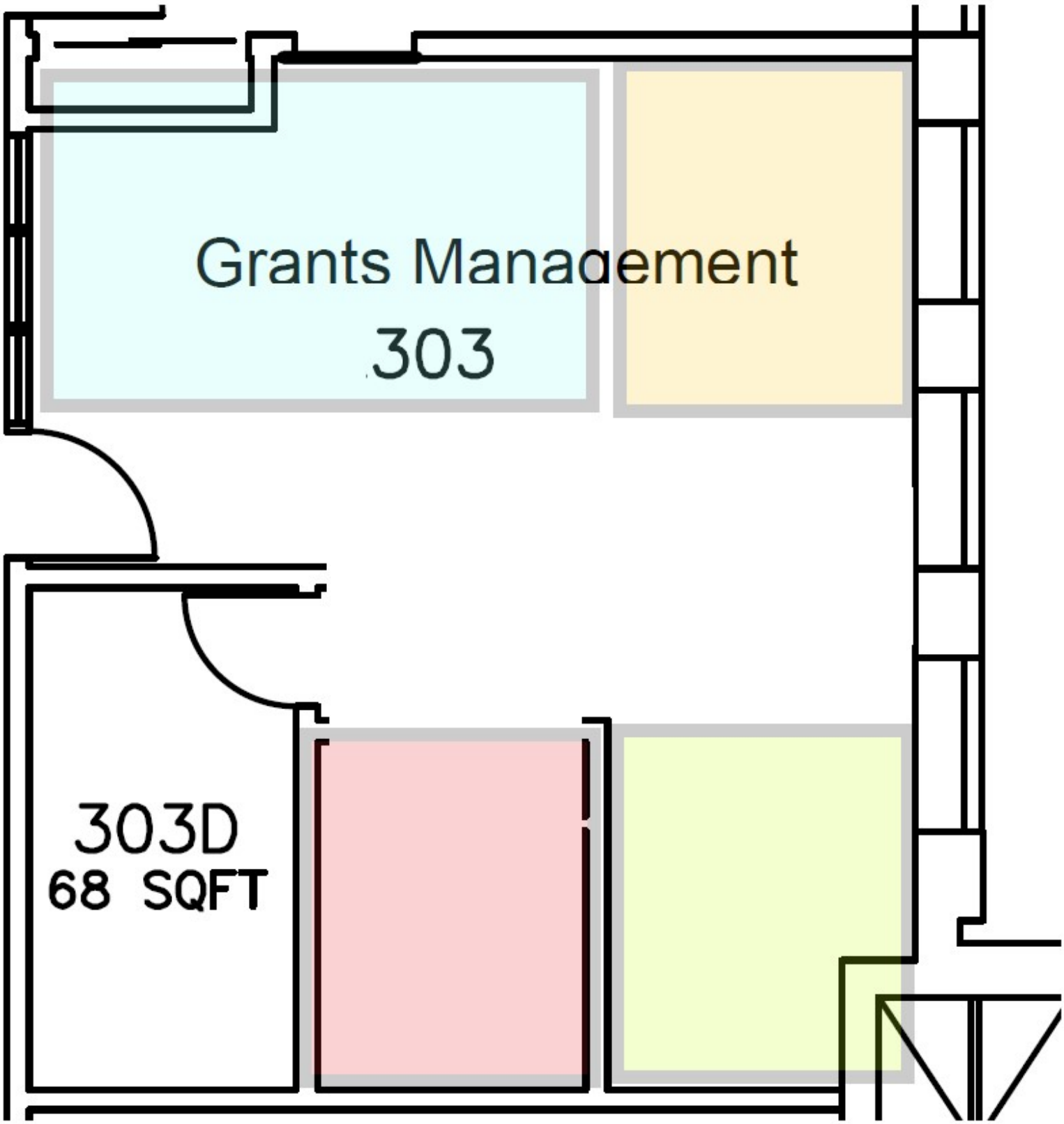
Single Occupancy

Up Traffic Only

Down Traffic Only

Benson Hall 3rd Floor




Grants Management
303
303D
68 SQFT

SAFETY DATA SHEET

Clorox® Clean-Up® Cleaner with Bleach - US

According to Regulation (EC) No 1907/2006, Annex II, as amended by Regulation (EU) No 453/2010

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name Clorox® Clean-Up® Cleaner with Bleach - US

Product number CX01204US, CX01151US

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

Identified uses Bleach

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier

CBee (Europe) Ltd.
Eton House
2nd Floor
18 - 24 Paradise Road
Richmond
TW9 1SE
UK
Tel: + 44 (0) 208 614 7120
Fax: + 44 (0) 208 940 2040
consumerservices@clorox.co.uk

1.4. Emergency telephone number

Emergency telephone

+44 (0) 208 614 7120
Monday - Thursday:- 09:00 - 17:30
Friday:- 09:00 - 17:00

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification

Physical hazards
Not Classified

Health hazards
Eye Irrit. 2 - H319

Environmental hazards
Not Classified

Classification (67/548/EEC or 1999/45/EC)
Xi; R36

2.2. Label elements

Pictogram

Signal word Warning

Clorox® Clean-Up® Cleaner with Bleach - US

Hazard statements

H319 Causes serious eye irritation.

Precautionary statements

P102 Keep out of reach of children.
P264 Wash contaminated skin thoroughly after handling.
P280 Wear eye and face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313 If eye irritation persists: Get medical advice/attention.

Supplemental label information

EUH206 Warning! Do not use together with other products. May release dangerous gases (chlorine).

Contains Sodium hypochlorite, solution 2.18 % Cl active

Detergent labelling < 5% chlorine-based bleaching agents, < 5% perfumes

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Sodium hypochlorite, solution ... % Cl active **2.18%**

CAS number: 7681-52-9 **EC number:** 231-668-3
M factor (Acute) = 10

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Corr. 1B - H314 Eye Dam. 1 - H318 Aquatic Acute 1 - H400	C; R34. N; R50. R31

sodium hydroxide **0.5 - <1%**

CAS number: 1310-73-2 **EC number:** 215-185-5

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Corr. 1A - H314 Eye Dam. 1 - H318	C; R35

Dodecyldimethylamine oxide **0.025 - <0.25%**

CAS number: 1643-20-5 **EC number:** 216-700-6
M factor (Acute) = 1

Classification	Classification (67/548/EEC or 1999/45/EC)
Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Aquatic Acute 1 - H400	Xi; R41, R38. N; R50

Clorox® Clean-Up® Cleaner with Bleach - US

bornan-2-one	<0.025%
CAS number: 76-22-2 **EC number:** 200-945-0	

Classification	Classification (67/548/EEC or 1999/45/EC)
Flam. Sol. 2 - H228 Acute Tox. 4 - H332 STOT SE 2 - H371	F; R11. Xn; R20, R68/20/21/22

Benzene	<0.025%
CAS number: 71-43-2 **EC number:** 200-753-7	

Classification	Classification (67/548/EEC or 1999/45/EC)
Flam. Liq. 2 - H225 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Muta. 1B - H340 Carc. 1A - H350 STOT RE 1 - H372 Asp. Tox. 1 - H304	F; R11. T; R48/23/24/25. Xn; R65. Xi; R36/38. Carc. Cat. 1 R45. Muta. Cat. 2 R46

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation

Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Ingestion

Rinse mouth thoroughly with water. Give plenty of water to drink. Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing.

Skin contact

Wash skin thoroughly with soap and water.

Eye contact

Remove any contact lenses and open eyelids wide apart. Continue to rinse.

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

Inhalation

Irritation of nose, throat and airway.

Ingestion

May cause discomfort if swallowed.

Skin contact

Prolonged skin contact may cause redness and irritation.

Eye contact

Irritation of eyes and mucous membranes. Prolonged contact may cause redness and/or tearing.

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

Notes for the doctor

The severity of the symptoms described will vary dependent on the concentration and the length of exposure.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Use fire-extinguishing media suitable for the surrounding fire.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Toxic gases or vapours.

5.3. Advice for firefighters

Special protective equipment for firefighters

Use protective equipment appropriate for surrounding materials.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions

Avoid contact with eyes and prolonged skin contact. Wear protective clothing as described in Section 8 of this safety data sheet.

6.2. Environmental precautions

Environmental precautions

Avoid discharge into drains or watercourses or onto the ground.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up

Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labelled with correct contents and hazard symbol.

6.4. Reference to other sections

Reference to other sections

See Section 11 for additional information on health hazards. For waste disposal, see Section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions

Read and follow manufacturer's recommendations.

Advice on general occupational hygiene

Avoid contact with eyes and prolonged skin contact.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions

Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits

sodium hydroxide

Short-term exposure limit (15-minute): WEL 2 mg/m3

bornan-2-one

Long-term exposure limit (8-hour TWA): WEL 2 ppm 13 mg/m3
Short-term exposure limit (15-minute): WEL 3 ppm 19 mg/m3

Benzene

Long-term exposure limit (8-hour TWA): WEL 1 ppm 3.25 mg/m3
Carc, Sk

WEL = Workplace Exposure Limit

Carc = Capable of causing cancer and/or heritable genetic damage.

Sk = Can be absorbed through the skin.

8.2. Exposure controls

Eye/face protection

Wear chemical splash goggles.

Hand protection

No specific hand protection recommended.

Hygiene measures

No specific hygiene procedures recommended but good personal hygiene practices should always be observed when working with chemical products.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance

Clear liquid.

Colour

Yellowish.

Odour

Citrus. Bleach

Odour threshold

Not determined.

pH

pH (concentrated solution): 12.4 - 12.8

Melting point

Not relevant.

Initial boiling point and range

Not determined.

Flash point

> 93°C CC (Closed cup).

Evaporation rate

Not determined.

Evaporation factor

Not determined.

Flammability (solid, gas)

Not relevant.

Upper/lower flammability or explosive limits

Not relevant.

Vapour pressure

Not determined.

Vapour density

Not relevant.

Relative density

~ 1.03

Bulk density

Not determined.

Partition coefficient

Not determined.

Auto-ignition temperature

Not relevant.

Decomposition Temperature

Not relevant.

Viscosity

Not determined.

Explosive properties

Not considered to be explosive.

Oxidising properties

The mixture itself has not been tested but none of the ingredient substances meet the criteria for classification as oxidising.

9.2. Other information

Other information

No information required.

SECTION 10: Stability and reactivity

10.1. Reactivity

There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability

Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Will not polymerise.

10.4. Conditions to avoid

Avoid excessive heat for prolonged periods of time.

10.5. Incompatible materials

Materials to avoid

No specific material or group of materials is likely to react with the product to produce a hazardous situation.

10.6. Hazardous decomposition products

None at ambient temperatures. Thermal decomposition or combustion products may include the following substances: Oxides of carbon. Oxides of nitrogen.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

Based on available data the classification criteria are not met.

Acute toxicity - dermal

Based on available data the classification criteria are not met.

Acute toxicity - inhalation

Clorox® Clean-Up® Cleaner with Bleach - US

Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data

Based on available data the classification criteria are not met.

Serious eye damage/irritation

Eye Irrit. 2 - H319 May cause severe eye irritation.

Respiratory sensitisation

Based on available data the classification criteria are not met.

Skin sensitisation

Based on available data the classification criteria are not met.

Germ cell mutagenicity

Genotoxicity - in vitro

Based on available data the classification criteria are not met.

Genotoxicity - in vivo

Based on available data the classification criteria are not met.

Carcinogenicity

Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility

Based on available data the classification criteria are not met.

Reproductive toxicity - development

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure

Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

Based on available data the classification criteria are not met.

Aspiration hazard

Not anticipated to present an aspiration hazard, based on chemical structure.

Toxicological information on ingredients.

Sodium hypochlorite, solution ... % Cl active

Acute toxicity - oral

Acute toxicity oral (LD50 mg/kg)

8,830.0

Species

Rat

REACH dossier information. Based on available data the classification criteria are not met.

ATE oral (mg/kg)

8,830.0

Acute toxicity - dermal

Acute toxicity dermal (LD50 mg/kg)

20000.0

Species

Rabbit

REACH dossier information. Based on available data the classification criteria are not met.

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ATE dermal (mg/kg)

20000.0

Acute toxicity - inhalation

Based on available data the classification criteria are not met.

Skin corrosion/irritation

Animal data

Dose: 5.3%, 4 hours, Rabbit Primary dermal irritation index: 1.2 Dose: 0.5 ml (12.5%), 24 hours, Rabbit Erythema/eschar score: Well defined erythema (2). Oedema score: Very slight oedema - barely perceptible (1). REACH dossier information. Corrosive to skin.

Serious eye damage/irritation

Dose: 0.1 g, 1 second, Rabbit REACH dossier information. Corrosivity to eyes is assumed.

Skin sensitisation

Buehler test - Guinea pig: Not sensitising. REACH dossier information.

Germ cell mutagenicity

Genotoxicity - in vitro

Chromosome aberration: Negative. REACH dossier information.

Genotoxicity - in vivo

Chromosome aberration: Negative. REACH dossier information.

Carcinogenicity

NOAEL > 13.75 mg/kg/day, Oral, Rat REACH dossier information.

IARC carcinogenicity

IARC Group 3 Not classifiable as to its carcinogenicity to humans.

Reproductive toxicity

Reproductive toxicity - fertility

One-generation study - NOAEL > 5 mg/kg/day, Oral, Rat P REACH dossier information.

Reproductive toxicity - development

Teratogenicity: - NOAEL: >=5.7 mg/kg/day, Oral, Rat REACH dossier information.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure

LOAEL 100 mg/kg/day, Oral, Rat REACH dossier information.

Aspiration hazard

Not anticipated to present an aspiration hazard, based on chemical structure.

sodium hydroxide

Skin corrosion/irritation

Animal data

Skin Corr. 1A - H314

Serious eye damage/irritation

Dose: 0.1 ml (2%), 1 second, Rabbit REACH dossier information.

Skin sensitisation

Patch test - Human: Not sensitising. REACH dossier information.

Aspiration hazard

Not anticipated to present an aspiration hazard, based on chemical structure.

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Dodecyldimethylamine oxide

Skin corrosion/irritation

Animal data

Skin Irrit. 2 - H315

Serious eye damage/irritation

Eye Dam. 1 - H318

bornan-2-one

Acute toxicity - inhalation

Converted acute toxicity point estimate (cATpE) Acute Tox. 4 - H332 Harmful by inhalation.

ATE inhalation (dusts/mists mg/l)

1.5

Germ cell mutagenicity

Genotoxicity - in vitro

Gene mutation: Negative. REACH dossier information.

Specific target organ toxicity - single exposure

STOT - single exposure

STOT SE 2 - H371 May cause damage to organs .

SECTION 12: Ecological Information

12.1. Toxicity

Not considered toxic to fish.

Clorox® Clean-Up® Cleaner with Bleach - US

Ecological information on ingredients.

Sodium hypochlorite, solution ... % Cl active

Acute aquatic toxicity

LE(C)$_{50}$

0.01 < L(E)C50 ≤ 0.1

M factor (Acute)

10

Acute toxicity - fish

LC_{50}, 96 hours: 0.032 mg/l, Oncorhynchus kisutch (Coho salmon) REACH dossier information.

Acute toxicity - aquatic invertebrates

EC_{50}, 48 hours: 0.141 mg/l, Daphnia magna REACH dossier information.

Acute toxicity - microorganisms

EC_{50}, 3 hours: > 3 mg/l, Activated sludge REACH dossier information.

Acute toxicity - terrestrial

NOEC, 10 days: 200 mg/l, Coturnix coturnix japonica (Japanese quail) REACH dossier information.

Chronic toxicity - fish early life stage

NOEC, 28 days: 0.04 mg/l, Menidia peninsulae (Tidewater silverside) REACH dossier information.

Chronic toxicity - aquatic invertebrates

NOEC, 15 days: 0.007 mg/l, Freshwater invertebrates REACH dossier information.

sodium hydroxide

Acute toxicity - fish

LC_{50}, 48 hours: 189 mg/l, Leuciscus idus (Golden orfe)

Acute toxicity - aquatic invertebrates

EC_{50}, 48 hours: 40.4 mg/l, Ceriodaphnia REACH dossier information.

Dodecyldimethylamine oxide

Aquatic Acute 1 - H400

Acute aquatic toxicity

LE(C)$_{50}$

0.1 < L(E)C50 ≤ 1

M factor (Acute)

1

bornan-2-one

Acute toxicity - aquatic invertebrates

LC_{50}, 48 hours: 9.303 mg/l, Daphnia magna REACH dossier information. QSAR.

Acute toxicity - aquatic plants

EC_{50}, 96 hours: 6.951 mg/l, Algae REACH dossier information. QSAR.

Acute toxicity - microorganisms

EC_{50}, 3 hours: > 100 mg/l, Activated sludge REACH dossier information.

12.2. Persistence and degradability

Persistence and degradability

The surfactant(s) contained in this product complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No. 648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them at their direct request, or at the request of a detergent manufacturer.

Clorox® Clean-Up® Cleaner with Bleach - US

Ecological information on ingredients.

Sodium hypochlorite, solution ... % Cl active

Phototransformation

Air - DT_{50} : 114.6 days Estimated value. Water - DT_{50} : 12 minutes REACH dossier information.

Dodecyldimethylamine oxide

Persistence and degradability

The product is readily biodegradable.

bornan-2-one

Biodegradation

Water - Degradation (77%): 28 days REACH dossier information. The substance is readily biodegradable.

12.3. Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

Not determined.

Ecological information on ingredients.

Sodium hypochlorite, solution ... % Cl active

Partition coefficient

log Pow: -3.42 Estimated value. REACH dossier information.

sodium hydroxide

The product is not bioaccumulating.

bornan-2-one

Partition coefficient

log Pow: 2.414 REACH dossier information.

12.4. Mobility in soil

Mobility

The product is soluble in water.

Ecological information on ingredients.

Sodium hypochlorite, solution ... % Cl active

Henry's law constant

0.076 @ 20°C Estimated value. REACH dossier information.

Surface tension

82.4 mN/m @ 20°C REACH dossier information.

12.5. Results of PBT and vPvB assessment

This product does not contain any substances classified as PBT or vPvB.

12.6. Other adverse effects

Not relevant.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information

Dispose of waste product or used containers in accordance with local regulations

SECTION 14: Transport information

Clorox® Clean-Up® Cleaner with Bleach - US

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: Regulatory information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

National regulations

EH40/2005 Workplace exposure limits.

EU legislation

Regulation (EC) No 648/2004 of the European Parliament and of the Council of 31 March 2004 on detergents (as amended)
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

SECTION 16: Other information

Classification procedures according to Regulation (EC) 1272/2008

Eye Irrit. 2 - H319: On basis of test data.

Revision comments

Classification according to CLP Annex I.

Revision date	04/05/2014
Revision	4
Supersedes date	01/03/2014
SDS number	176

Risk phrases in full

Clorox® Clean-Up® Cleaner with Bleach - US

R11 Highly flammable.
R20 Harmful by inhalation.
R31 Contact with acids liberates toxic gas.
R34 Causes burns.
R35 Causes severe burns.
R36/38 Irritating to eyes and skin.
R38 Irritating to skin.
R41 Risk of serious damage to eyes.
R45 May cause cancer.
R46 May cause heritable genetic damage.
R48/23/24/25 Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.
R50 Very toxic to aquatic organisms.
R65 Harmful: may cause lung damage if swallowed.
R68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

Hazard statements in full

H225 Highly flammable liquid and vapour.
H228 Flammable solid.
H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H340 May cause genetic defects.
H350 May cause cancer.
H371 May cause damage to organs .
H372 Causes damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.

Ethanol, 70%

SECTION 1: Identification of the substance/mixture and of the supplier

Product name: **Ethanol, 70%**

Manufacturer/Supplier Trade name:

Manufacturer/Supplier Article number: **S25306**

Recommended uses of the product and restrictions on use:

Manufacturer Details:

AquaPhoenix Scientific, Inc
9 Barnhart Drive, Hanover, PA 17331
(717) 632-1291

Supplier Details:

Fisher Science Education
6771 Silver Crest Road, Nazareth, PA 18064
(724)517-1954

Emergency telephone number:

Fisher Science Education Emergency Telephone No.: 800-535-5053

SECTION 2: Hazards identification

Classification of the substance or mixture:

Flammable liquids, category 2
Acute toxicity (oral, dermal, inhalation), category 3
Reproductive toxicity, category 2
Specific target organ toxicity following single exposure, category 3
Narcotic effects
Specific target organ toxicity following repeated exposure, category 2

Hazard statements:

Highly flammable liquid and vapour.
Toxic if swallowed.
May cause drowsiness or dizziness.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.

Precautionary statements:

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Do not eat, drink or smoke when using this product.
Avoid breathing dust/fume/gas/mist/vapours/spray.
Use only outdoors or in a well-ventilated area.
Use personal protective equipment as required.
Keep away from heat/sparks/open flames/hot surfaces – No smoking.
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/light/…/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Wash … thoroughly after handling.
IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of fire: Use ... for extinction.
Rinse mouth.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Get Medical advice/attention if you feel unwell.
Collect spillage.
IF exposed or concerned: Get medical advice/attention.
Store in a well ventilated place. Keep cool.
Store locked up.
Store in a well ventilated place. Keep container tightly closed.
Dispose of contents/container to ....

Other Non-GHS Classification:

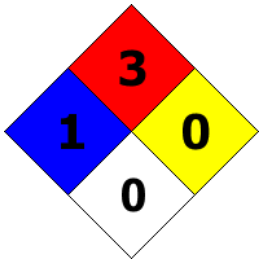
WHMIS

B2 

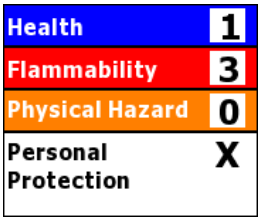
D2B 

D1B 

NFPA/HMIS



NFPA SCALE (0-4)



HMIS RATINGS (0-4)

SECTION 3: Composition/information on ingredients

Ingredients:		
CAS 64-17-5	Ethanol, Denatured*	70 %
CAS 67-56-1	*Methanol	<10 %
CAS 108-10-1	*MIBK	<10 %
CAS 67-63-0	*Isopropyl Alcohol	<10 %
CAS 7732-18-5	Water, Purified	30 %
		Percentages are by weight

SECTION 4: First aid measures

Description of first aid measures

After inhalation:

Move exposed individual to fresh air. Loosen clothing as necessary and position individual in a comfortable position. Seek medical advice if discomfort or irritation persists.

After skin contact:

Wash affected area with soap and water. Rinse thoroughly. Seek medical attention if irritation, discomfort or vomiting persists.

After eye contact:

Protect unexposed eye. Rinse/flush exposed eye(s) gently using water for 15-20 minutes. Remove contact lens(es) if able to do so during rinsing. Seek medical attention if irritation persists or if concerned.

After swallowing:

Rinse mouth thoroughly. Do not induce vomiting. Have exposed individual drink sips of water. Seek medical attention if irritation, discomfort or vomiting persists.

Most important symptoms and effects, both acute and delayed:

Irritation. Nausea. Headache. Shortness of breath. Dizziness. Vomiting. Impact to organs (liver, eyes, other-various). Impact to fetus (if pregnant).

Indication of any immediate medical attention and special treatment needed:

If seeking medical attention, provide SDS document to physician.

SECTION 5: Firefighting measures

Extinguishing media

Suitable extinguishing agents:

If in laboratory setting, follow laboratory fire suppression procedures. Use appropriate fire suppression agents for adjacent combustible materials or sources of ignition. Water. Dry chemical. Foam. Carbon dioxide.

Unsuitable extinguishing agents: None

Special hazards arising from the substance or mixture:

Combustion products may include carbon oxides or other toxic vapors. Dangerous fire hazard when exposed to heat, sparks and open flames.

Advice for firefighters:

Protective equipment:

Wear protective equipment. Use NIOSH-approved respiratory protection/breathing apparatus. Use spark-proof tools and explosion-proof equipment.

Additional information (precautions):

Move product containers away from fire or keep cool with water spray as a protective measure, where feasible.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Wear protective equipment. Use respiratory protective device against the effects of fumes/dust/aerosol. Keep unprotected persons away. Ensure adequate ventilation. Keep away from ignition sources. Protect from heat. Stop the spill, if possible. Contain spilled material by diking or using inert absorbent. Transfer to a disposal or recovery container.

Environmental precautions:

Prevent from reaching drains, sewer or waterway. Collect contaminated soil for characterization per Section 13. Collect spilled liquid for recovery, treatment or disposal.

Methods and material for containment and cleaning up:

If in a laboratory setting, follow Chemical Hygiene Plan procedures. Collect liquids using vacuum or by use of absorbents. Place into properly labeled containers for recovery or disposal. If necessary, use trained response staff/contractor.

Reference to other sections: None

SECTION 7: Handling and storage

Precautions for safe handling:

Prevent formation of aerosols. Follow good hygiene procedures when handling chemical materials. Do not eat, drink, smoke, or use personal products when handling chemical substances. If in a laboratory setting, follow Chemical Hygiene Plan. Use only in well ventilated areas. Avoid splashes or spray in enclosed areas. Wash hands before breaks and at the end of work.

Conditions for safe storage, including any incompatibilities:

Store in a cool location. Provide ventilation for containers. Avoid storage near extreme heat, ignition sources or open flame. Store away from foodstuffs. Store away from oxidizing agents. Store in cool, dry conditions in well sealed containers. Keep container tightly sealed. Store in secure flammable storage area away from sources of ignition. Protect from freezing and physical damage.

SECTION 8: Exposure controls/personal protection

Control Parameters:

108-10-1, MIBK, ACGIH TLV STEL: 75 ppm).
67-63-0, 2-Propanol, OSHA PEL TWA: 400 ppm (980 mg/m3).
67-63-0, 2-Propanol, NIOSH REL: TWA 400 ppm (980 mg/m3).
67-63-0, 2-Propanol, NIOSH REL ST: 500 ppm (1225 mg/m3).
67-63-0, 2-Propanol, ACGIH TLV TWA: 200 ppm.
67-63-0, 2-Propanol, ACGIH TLV STEL: 400 ppm.
64-17-5, Ethanol, ACGIH TLV TWA: 1000 ppm (1881mg/m3).
64-17-5, Ethanol, OSHA PEL: TWA 1000 ppm (1900 mg/m3).
64-17-5, Ethanol, NIOSH IDLH: 3300 ppm [10%LEL].
64-17-5, Ethanol, NIOSH REL TWA: 1000 ppm (1900 mg/m3).
67-56-1, Methanol, OSHA PEL TWA: 260 mg/m3 (200 ppm).
67-56-1, Methanol, OSHA PEL STEL: 325 mg/m3 (250 ppm).
67-56-1, Methanol, ACGIH TLV TWA: 262 mg/m3.
67-56-1, Methanol, ACGIH TLV STEL: 328 mg/m3 (250 ppm).
108-10-1, MIBK, OSHA PEL TWA: 205 mg/m3 (50 ppm).
108-10-1, MIBK, OSHA PEL STEL: 300 mg/m3 (75 ppm).
108-10-1, MIBK, ACGIH TLV TWA 20 mg/m3.

Appropriate Engineering controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of use/handling. Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapor or mists below the applicable workplace exposure limits (Occupational Exposure Limits-OELs) indicated above.

Respiratory protection: Not required under normal conditions of use. Use suitable respiratory protective device when high concentrations are present. Use suitable respiratory protective device when aerosol or mist is formed. For spills, respiratory protection may be advisable.

Protection of skin: The glove material has to be impermeable and resistant to the product/ the substance/ the preparation being used/handled. Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation.

Eye protection: Safety glasses with side shields or goggles.

General hygienic measures: The usual precautionary measures are to be adhered to when handling chemicals. Keep away from food, beverages and feed sources. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Do not inhale gases/fumes/dust/mist/vapor/aerosols. Avoid contact with the eyes and skin.

SECTION 9: Physical and chemical properties

Appearance (physical state, color):	Clear, colorless liquid	**Explosion limit lower**: **Explosion limit upper**:	3.3 19.0
Odor:	Alcohol	**Vapor pressure**:	73 mm Hg @ 20 C
Odor threshold:	10 ppm	**Vapor density**:	1.59
pH-value:	Not determined	**Relative density**:	0.790 @ 20°C
Melting/Freezing point:	-114.1C	**Solubilities**:	infinite solubility.
Boiling point/Boiling range:	78 C	**Partition coefficient (n-octanol/water)**:	Not determined
Flash point (closed cup):	16.6°C	**Auto/Self-ignition temperature**:	363°C
Evaporation rate:	Not determined	**Decomposition temperature**:	Not determined
Flammability (solid,gaseous):	Flammable	**Viscosity**:	a. Kinematic: Not determined b. Dynamic: Not determined
Density: Not determined			

SECTION 10: Stability and reactivity

Reactivity:

Stable under normal conditions of use and storage.

Chemical stability:

No decomposition if used and stored according to specifications.

Possible hazardous reactions:

None under normal processing.

Conditions to avoid:

Excess heat, Incompatible Materials, Ignition source, or Flame.

Incompatible materials:

Strong oxidizers, heat, sparks, open flames, platinum, sodium, bromine pentafluoride, potassium dioxide, acetyl bromide, acetyl chloride.

Hazardous decomposition products:

Oxides of carbon, acrid and irritating fumes.

SECTION 11: Toxicological information

Acute Toxicity:		
Inhalation:	64000 mg/kg 4 hr	LD50(rat) (Methanol 64-17-5)
Oral:	7060 mg/kg	LD50 oral-rat: (Ethanol 64-17-5)
Oral:	6200 mg/kg	LD50(rat) (Ethanol 64-17-5)
Oral:	4600 mg/kg	LD50(rat) (MIBK 108-10-1)
Oral:	5628 mg/kg	LD50(rat) (Methanol 67-56-1)
Inhalation:	20000 mg/kg 10 hr	LD50(rat) (Ethanol 64-17-5)
Inhalation:	8.2 mg/kg 4 hr	LD50(rat) (MIBK 108-10-1)
Chronic Toxicity:		
Oral:	May cause damage to the following organs: blood, kidneys, the reproductive system, liver, gastrointestinal tract, upper respiratory tract, skin, central nervous system (CNS), eye, lens or cornea.	Human
Corrosion Irritation:		
Ocular:		May cause eye irritation.
Sensitization:		No additional information.
Single Target Organ (STOT):		Classified as STOT in Section 2 (multiple organs - see above, Section 11).
Numerical Measures:		No additional information.
Carcinogenicity:		IARC: IARC classification (1) for Ethanol, CAS# 64-17-5, is intended for use in alcoholic beverage use only. This product is NOT intended for this use. : Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)
Mutagenicity:		No additional information.
Reproductive Toxicity:		No additional information.

SECTION 12: Ecological information

Ecotoxicity:

: Ethanol has a slight acute and chronic toxicity to aquatic life.

Persistence and degradability:

Readily degradable in the environment.

Bioaccumulative potential:

No information available.

Mobility in soil:

Aqueous solution has high mobility in soil.

Other adverse effects:

None Identified.

SECTION 13: Disposal considerations

Waste disposal recommendations:

Product/containers must not be disposed together with household garbage. Do not allow product to reach sewage system or open water. It is the responsibility of the waste generator to properly characterize all waste materials according to applicable regulatory entities (US 40CFR262.11). Consult federal state/ provincial and local regulations regarding the proper disposal of waste material that may incorporate some amount of this product.

SECTION 14: Transport information

UN-Number:

1170

UN proper shipping name:

Ethanol (Mixture)

Transport hazard class(es): None
Packing group: II
Environmental hazard: None
Transport in bulk: Not Applicable
Special precautions for user: None

SECTION 15: Regulatory information

United States (USA)

SARA Section 311/312 (Specific toxic chemical listings):

Acute, Chronic, Fire

SARA Section 313 (Specific toxic chemical listings):

67-56-1 Methanol.
67-63-0 2-Propanol.
108-10-1 MIBK.

RCRA (hazardous waste code):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

None of the ingredients are listed.

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act):

None of the ingredients are listed.

Proposition 65 (California):

Chemicals known to cause cancer:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

108-10-1 Methanol.

Canada

Canadian Domestic Substances List (DSL):

All ingredients are listed.

Canadian NPRI Ingredient Disclosure list (limit 0.1%):

64-17-5 Ethanol.

Canadian NPRI Ingredient Disclosure list (limit 1%):

67-56-1 Methanol.
67-63-0 2-Propanol.
108-10-1 MIBK.

SECTION 16: Other information

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations. Note. The responsibility to provide a safe workplace remains with the user. The user should consider the health hazards and safety information contained herein as a guide and should take those precautions required in an individual operation to instruct employees and develop work practice procedures for a safe work environment. The information contained herein is, to the best of our knowledge and belief, accurate. However, since the conditions of handling and use are beyond our control, we make no guarantee of results, and assume no liability for damages incurred by the use of this material. It is the responsibility of the user to comply with all applicable laws and regulations applicable to this material.

GHS Full Text Phrases: None

Abbreviations and Acronyms:

IMDGInternational Maritime Code for Dangerous Goods.
PNECPredicted No-Effect Concentration (REACH).
CFRCode of Federal Regulations (USA).
SARASuperfund Amendments and Reauthorization Act (USA).
RCRAResource Conservation and Recovery Act (USA).
TSCAToxic Substances Control Act (USA).
NPRINational Pollutant Release Inventory (Canada).
DOTUS Department of Transportation.
IATAInternational Air Transport Association.
GHSGlobally Harmonized System of Classification and Labelling of Chemicals.

ACGIHAmerican Conference of Governmental Industrial Hygienists.
CASChemical Abstracts Service (division of the American Chemical Society).
NFPANational Fire Protection Association (USA).
HMISHazardous Materials Identification System (USA).
WHMISWorkplace Hazardous Materials Information System (Canada).
DNELDerived No-Effect Level (REACH).

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