SafetyMatters

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Environmental Health & Safety

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Radiation Safety
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rso-ehrs@columbia.edu

Photo Credit: Adobe Stock

Expecting Visitors?

As summer approaches, EH&S would like to remind the University research community about Columbia's Policy regarding short-term visitors for Research-Related and Clinical Activities.

Preparing Your Lab for the Triennial Site Visit by AAALAC International

By: Christopher Aston, Ph.D

(Associate Director: Biological Safety Programs)

Columbia's animal care and use program is proud to be accredited by AAALAC International, who will be conducting a triennial site visit at the University this summer (final date pending). The scope of the AAALAC site visit includes a walk-through of animal facilities as well as Principal Investigator (PI)-directed laboratories where live animal are manipulated in research. Both animal welfare and worker safety will be surveyed, so it is important that laboratories maintain best practices. EH&S is available to help you prepare your laboratories. In the weeks leading up to the site visit, EH&S staff have begun, and will continue, to make unscheduled visits to laboratories that work with animals.

During this EH&S outreach staff will engage the PI, lab manager or any other lab members that are present to have a brief conversation about the expectations for AAALAC and will survey worker safety conditions in all areas where animals are handled. Areas of focus will include attention to appropriate laboratory attire and personal protective equipment, engineering controls for the use of formaldehyde, isoflurane, and biohazardous materials, access to eye wash stations, as well as housekeeping practices such as hand hygiene and use of appropriate disinfectants.

Photo Credit: Adobe Stock

Laboratories should maintain best practices to help protect the health and safety of all! Please review the information below to ensure your laboratory is prepared.

An EH&S visit is anticipated to take no more than 30 minutes. Lab members are kindly asked to assist the EH&S surveyors as needed and listen to the important message they are delivering. Expectations for best practices have been communicated to PIs by email and can be reviewed on the EH&S Website.

Thank you in advance for your attention and compliance. For questions or concerns, please contact labsafety@columbia.edu.

Tips & Tricks: AAALAC Survey Readiness

aaalac INTERNATIONAL 2022 SITE VISIT

Throughout the Spring, EH&S surveyors visited lab spaces where research with animals is performed. The list below comprises areas where our surveyors commonly identified issues, along with some best practices.

General Items to Keep in Mind:
- 24 Hr. Emergency Contact should be updated and posted in all active research spaces.
- FOOD and DRINK consumption should be prohibited within all research spaces.

Laboratory Attire:
- Long Pants (or equivalent) and closed-toe shoes should be worn at all times while in the laboratory.

Personal Protective Equipment:
- A laboratory coat, gloves, and eye protection should be worn when actively working at the bench.
- The appropriate PPE for each research task should be readily available and utilized correctly.

Biosafety Cabinets:
- All cabinets should be certified within the past year.

Emergency Eye Wash:
- Each eyewash within the lab should be unobstructed and inspected weekly for function and clear water.

Chemical Fume Hoods:
- Working spaces should be uncluttered.
- The sash should be closed when not in use.

Laboratory Housekeeping:
- Sharps/Regulated Medical Waste (RMW) Containers should be disposed of appropriately and not be overfilled.
- Benchtops should generally be free of sharps, rubbish, and excess clutter.

Prudent Personal Protective Equipment Use

By: Robert Giordano, MPH (Safety Advisor)

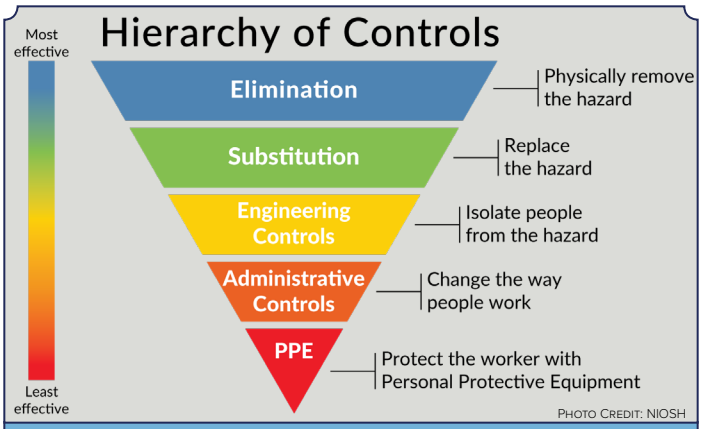
Just before the following incident occurred at another institution, a researcher preparing media for a future experiment experienced a momentary lapse in concentration. While working within a chemical fume hood, the researcher was preparing to transfer methanol into a media flask and accidentally "flamed" the rim of the methanol bottle with the Bunsen burner rather than the flask. When the container caught fire, the researcher rapidly placed the burning bottle onto the fume hood work surface, causing a modest volume of methanol to splash out of the container and set their clothes on fire. At the time of the accident, they were not wearing a Lab Coat or the required Personal Protective Equipment (PPE) and consequently suffered second-degree burns.

Although the above incident did not occur in a Columbia University Laboratory, it is a stark example of what can happen in the absence of PPE when the Hierarchy of Controls does not offer complete protection from hazardous materials. It reminds us why researchers must be mindful when completing their work, especially if the procedure is routine, to prevent simple mistakes. Although the researcher above was working within a chemical fume hood, if they had been wearing an appropriate lab coat, they might have been able quickly to remove it before the fire spread to their clothes underneath, reducing the severity or preventing the injuries altogether. As the summer approaches and the nature of wearing PPE becomes cumbersome, it is essential to remember that sufficient and prudent PPE use will complement higher, more effective controls by adding additional layers of protection between the user and the hazard.

Under the University PPE Policy, all personnel working in research laboratories or support areas are required to use PPE when there is the potential for exposure to hazardous materials. The Principal Investigator (PI) and the laboratory manager are responsible for ensuring that the required PPE is made available throughout lab spaces. Additionally, they should ensure that the available PPE is appropriate for the known/anticipated risk(s) posed by the hazardous materials used in conjunction with related procedures, processes, tasks, and equipment.

Personnel working within the laboratories, on the other hand, are responsible for completing appropriate training and understanding how to use and maintain the required PPE according to the University, departmental, and laboratory-specific policies, procedures, and guidance. In addition to understanding the appropriate uses of distinct types of PPE, personnel should appreciate the implicit limitations of PPE. For example, increasing the amount or use of PPE will not always lead to a safer environment. PIs and Lab Managers should be mindful of this and select PPE that provides the appropriate level of protection without compromising the researcher's health or their ability to perform any duties safely. Further, PPE should never be used as a substitute for comprehensive engineering and administrative controls but should be incorporated as an additional measure of protection once all other reasonable precautions have been taken.

Finally, it is essential to recognize that laboratory personnel must dress appropriately under their PPE for the controls to be effective. Therefore, EH&S strongly recommends that individuals ensure that a change of clothes, including long pants and closed-toe shoes, is always available at work to prevent one from being unprepared to enter the laboratory. By having the appropriate attire and PPE intrinsically available, individuals can avoid the temptation of wearing improper or insufficient PPE by allowing for the opportunity to change back into more relaxed clothes during travel and non-laboratory-related work, especially during the sweltering summer months!



Traditionally, a hierarchy of controls is used to determine how to implement feasible and effective control solutions. Generally, the control methods at the top of the graphic are more effective and protective than those at the bottom.

Guidance for Selecting the Best PPE for the Job

The EH&S office has developed several resources to assist researchers to meet the University's Policies on PPE Selection and Use:

1. LATCH Assessment:

The Laboratory Assessment Tool and Chemical Hygiene (LATCH) complements University PPE Policy, and provides users with a list of recommended PPE based on user indicated research activities. Personnel can access the LATCH via the Online LION Module.

2. Environmental Health & Safety:

Research Safety Specialists can work directly with laboratory staff to complete a PPE Hazard Assessment and consult on specific issues, such as choosing the most appropriate Lab Coat. Please email OccuSafety@columbia.edu for questions or assistance relating to PPE Hazard Assessments.

Summer Weather is Here! Stay Safe with the Proper PPE!!

The Safe Way

- Using Eye Protection
- Buttoned Lab Coat
- Gloves On
- Wearing Long Pants
- Wearing Closed-Toe Shoes

The Dangerous Way

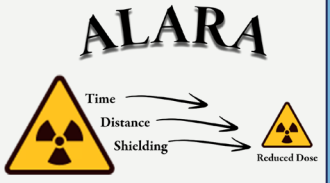
- No Eye Protection
- No Lab Coat
- No Gloves
- Wearing Shorts
- Wearing Sandals

For Additional Resources:
Check Out The EH&S PPE Policy for more details

Radiation Safety Dosimetry

The University dosimetry program provides radiation monitoring services for various radiation workers and x-ray users across the University System. Our goal is to maintain all workers' radiation exposures As Low As Reasonably Achievable (**ALARA**).

What is ALARA?



As Low As Reasonably Achieveable

Where do Dosimeter Badges Come From?

LANDAUER provides the University with dosimeter badges for Radiation Users and provides dosimeter readings and reports for individuals **Online**.

How to Get a New Dosimeter Badge?

New dosimeter users must attend an in-person radiation safety training before obtaining a dosimeter by emailing badges@Columbia.edu.

How to Review Dosimetry Records?

- Navigate to the **myLDR Homepage** and log in with the following:
  - **Username:** idrcolu
  - **Password:** CUdoseIDR247
- Follow the posted instructions to enter your Account Number and badge-specific Serial Number.
  - Unclip your Badge from the holder to locate your Account/Serial Numbers on the back of the badge.

Lost or Damaged Dosimetry Badges?

- **Can I wear someone else's badge?**
  - Please do not wear, loan, or assign someone else's Dosimetry Badge to another person. Doses are tracked for assigned individual.
- **What to do if I lose a badge?**
  - If you lose or damage the badge, please report it promptly to the Radiation Safety Office by calling **(212) 305-5359** or emailing badges@columbia.edu.

How to Apply For a Dosimetry Badge and Why It Is Important

By: Regina Ines Calvo Gonzales Prada

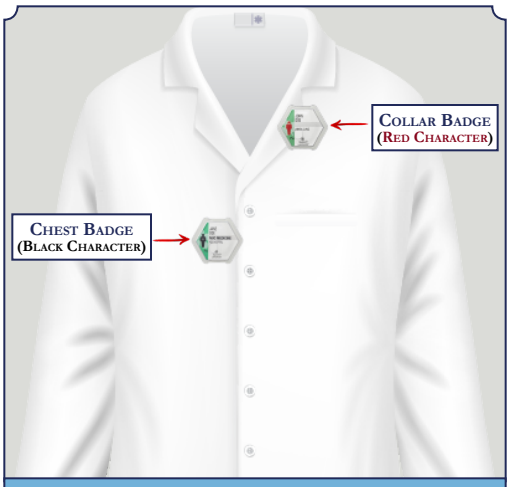
(Radiation Safety Program Coordinator)

Getting and wearing a dosimeter is essential. It is a requirement of New York City and New York State Regulations, and compliance is reviewed at every inspection. Generally, anyone who works with radiation sources at Columbia University or its affiliated institutions must be issued a radiation dosimeter from the Radiation Safety Office. More importantly, though, dosimetry data provides the means for Radiation Safety to verify that radiation is being handled safely and effectively.

EH&S and the Radiation Safety office have created a simple and effective procedure to provide dosimetry badges for all who require them. The process starts at the **EH&S website**, where a **Dosimeter Application Form** is completed. Next, applicants provide their information, including which campus and department they work in and which radiation sources they will be working with. Once Radiation Safety receives the application, the Radiation Safety Program Coordinator will follow up via email with the necessary next steps, including the required training courses for the applicant's particular use.

Research users who work with high-energy emitting isotopes (such as P-32, I-131, I-125, Zr-89, F-18, Tc-99m, TI-201, Cr-51, and Na-22) must take a two-part training: the first part is on the **RASCAL** platform, course TC-1750. Once this RASCAL course is completed, a link will be provided via email to register for a live training session currently given on Zoom. After the attendance is provided to the Radiation Safety Coordinator, a dosimetry badge is assigned. Finally, an email is sent to the applicant to let them know that the badge is ready to be picked up.

Those working in clinical areas will receive registration information for their required training course, which is offered only in a live session or via Zoom. Depending on your department, applicants will receive one of two badges: one worn on the collar or the chest. Collar badges are given to those that work with fluoroscopy and wear protective lead garments, and their badge is to be worn outside of the lead. Other users are given chest badges worn on the front of the torso.



Collar Badges: Can be identified by the **RED Character** at the collar level, and should be worn outside of a lead apron on the collar of your lab coat.

Chest Badges: Can be identified by the **BLACK Character** at the chest level, and should be worn underneath your lead apron (if you wear a lead apron).

For other types of research users, such as those that work only with x-ray devices or sealed source irradiators, links to the appropriate RASCAL training course will be provided, which do not need to require the supplemental live session. In addition, some of those users may not even need to wear radiation dosimeters – the email response will advise accordingly.

Dosimetry is a vital part of the Radiation Safety Program at Columbia University. The Program relies on all participants to request access when needed, wear dosimeters properly, and return them for processing on time.

If you have any questions about radiation dosimetry, do not hesitate to contact badges@columbia.edu for help.

Who Can I Contact with Any Questions?

Please reach out to the Radiation Safety Coordinator with any questions or concerns about Radiation Dosimetry or Individual Badges.

Radiation Safety Coordinator:

Regina Ines Calvo Gonzales Prada
Office Number: (212) 305-5359
Email: badges@columbia.edu

Where Should I Return Old Badges?

Radiation users should return Dosimetry Badges to the Radiation Safety Office within 14 business days after the end of the wear period. Individuals can:

Drop-off:

617 W 168th Street, Georgian Building
Second Floor: Room 261

Return via Inter-Office Mail:

Radiation Safety Office
630 W 168th Street: Mail Box 70

Radiation Therapy: Putting Patients First

***By: Dwayne Bryant** (Health Physicist)*

One of the primary roles of the EH&S Clinical Radiation Safety Program is to assist in all therapeutic procedures involving radioactive materials at New York-Presbyterian (NYP) Hospital. Specifically, Health Physicists work to ensure that patients are well informed about potential radiation hazards to keep their loved ones around them safe once they are discharged.

With this goal in mind, the Clinical Radiation Safety team conducts personalized consultations with patients over the phone or in-person to accomplish this mission, addressing any radiation safety-related concerns. The program's role is achieved under NYP Hospital's credo, "We Put Patients First!"

Photo Credit: Adobe Stock

The NYP Credo "We Put Patients First" is at the heart of the Clinical Radiation Team's Mission!

Photo Credit: Adobe Stock

By providing patients with the information they need to feel confident after therapy, the Clinical Radiation team provides Patient Centered Care that satisfy and exceed expectations.

Empathy, Excellence, and Respect

The clinical team embodies this patient focused mentality by showing empathy, excellence, and respect when interacting with patients. Expressing empathy is an essential and powerful tool that builds trust and reduces patients' anxiety. A hospital setting can be stressful, especially in the case of radiation treatments. By being empathetic and understanding the patient's circumstances, one can help ease their tensions. Something as simple as saying hello or initiating a friendly conversation can go a long way. The Clinical Radiation Safety team exemplifies excellence by providing patient-specific instructions and communicating science in a simple manner. The instructions offer patients a clear understanding of post-treatment precautions to ensure regulatory compliance and promote radiation safety.

Best Practices and Respectful Relationships

Our guidelines follow established best practices, consider patients' preferences and priorities, and exemplify how the hospital's high expectations are met. These standards reassure all involved in the patient's care that staff work diligently to provide the best possible experience and excellent customer service.

Lastly, establishing a respectful relationship with patients is crucial for delivering radiation safety expertise during these treatments. During such a tumultuous period in patients' lives, it is only expected that their healthcare team should treat them with dignity. Respectfully acknowledging and addressing patient concerns helps create an environment where they feel welcomed and supported. The ultimate goal of the Clinical Radiation Safety Program is to ensure the safe handling and use of radiation throughout the NYP Hospital network. By effectively communicating these practices, the Clinical Radiation team strives to provide peace of mind to patients and their families.

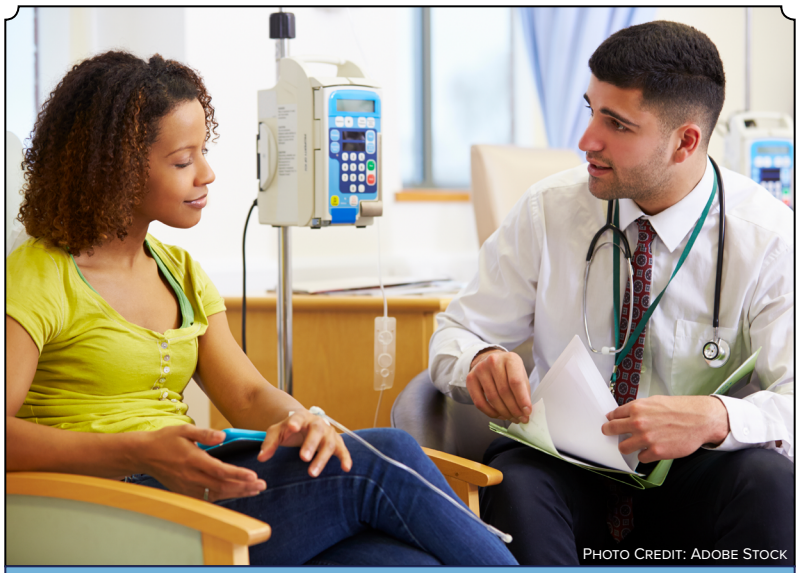


Photo Credit: Adobe Stock

The ultimate goal of the Clinical Radiation Team is to promote patient focused care based on established best practices for a stress-free experience and optimal health outcomes.

Meet the Environmental Health & Safety Office

Daniela D'Armetta

Manager for Training and Development

Daniela D'Armetta grew up in the Bronx, the hometown of Regis Philbin and Ralph Lauren. She has been with EH&S for almost nine years. Her first position was coordinating the dosimetry program, and subsequently moved to the training program, where her current position is Manager for Training and Development, Human Resources. Of course, her favorite sports team is the Bronx Bombers, aka the New York Yankees. Some of her favorite childhood memories are with her family on her father's boat. Her love of the water is why she would love to live outside the City in a cottage by the sea.

When she is not at work, Daniela spends time with her husband and two boys. They explore old and unfamiliar places, go to movies, parks, and restaurants. Every year the family takes an outing to Disney, their favorite vacation destination. As evident in their family adventures, both Daniela and her husband are motivated to provide their family and children with an enriching life. Her spirit animal is the Momma (Brown) Bear because she is affectionate, protective, devoted, and loves to eat! Her favorite defining characteristics are her optimism and compassion.

Daniela's creative and artistic abilities are displayed in her oil paintings and the crafts she enjoys working on with her sons. Team EH&S also enjoys Daniela's creativity as a leader for the many team-building activities she thoughtfully arranges for the staff during the year. She does take some downtime to relax by reading a book, enjoying a bubble bath, or watching a movie or TV show in her home theatre. However, her free time is limited, as she is currently studying for the Society for Human Resources Management Certification Exam. Her favorite professional advice: Quit Taking it Personally! A good lesson for all!

Christopher Pettinato, MPH, CSP

Assistant Vice President

Christopher Pettinato grew up on Long Island and shared a hometown with WNBA legend Sue Bird, who started her playing career at the same church where Chris has been a youth basketball coach for eight years. Although Stowe, Vermont is among his favorite places, if he had to choose one area in the world to live in, he would easily pick the Amalfi Coast in Italy because the food is fantastic (and he loves to eat!).

Chris came to Columbia to attend the Mailman School of Public Health and has held six different positions at the University during his 25-year career, and recently was promoted to Assistant Vice President of Environmental Health and Safety. As a teenager, he held many part-time jobs, but his favorite was being a movie usher, which he continued to do through college. Chris is motivated by helping others, and the best work advice he has received is, "If you do not enjoy your job, then find another one. Everybody will be happier."

As an elementary school student, he authored an essay about the kind of animal he would like to be, he chose an eagle. Being able to fly long distances and soar high intrigued him (and at ten years old, he could not afford a plane ticket). An avid road cyclist, he has enjoyed riding since high school. He kept his first road bike, a light blue Fuji League, until 15 years ago when he gave it to someone who needed a bicycle. Chris still thinks of the bike and the pleasure of riding it. His favorite sports team is the Yankees, and he treasures the memories of collecting baseball cards as a hobby, finding the rare card, and chewing the stale gum!.

On his long drive home each day, Chris listens to podcasts to pass the time and learn about assorted topics of interest. He enjoys listening to David Attenborough narrate nature documentaries such as the "Biggest Threat Modern Humans Have Ever Faced" regarding climate change, the topic on top of Chris's list of changes needed in the world. Always striving to be better, his favorite quote is from Aristotle, "We are what we repeatedly do; excellence, then, is not an act but a habit." It is that idea that has driven Chris to make EH&S excellent. Over his career at EH&S, he has worked on many unique and challenging projects, such as his teams' current project assisting student clubs in the School of Engineering and Applied Sciences in preparing for their annual national competitions in car racing and rocketry. Although others may not laugh with him, he enjoys his sense of humor and knows at least one person in the room will be laughing!

The Environmental Health & Safety April Q&A Lunch Voucher Winner

Congratulations to Alshymaa Hassan
(Technician: Department of Pulmonary Medicine)

Each month EH&S offers Q&A Sessions with the Research Safety and Biosafety Teams to provide an open forum for lab personnel to supplement regular RASCAL Safety Trainings and ask any follow-up questions.

All participants are entered into a drawing for a lunch voucher at the fabulous CUIMC Faculty Club. Don't miss out. Join the next session!

See Below for More Details on Upcoming Zoom Sessions:

Research Safety	Biosafety

Additional Chances to Win a Voucher to the Faculty Club

Look for EH&S' Digital Signs on Columbia University campuses.

If you answer a question regarding the slide using the QR code...

YOU could be a WINNER!

Having Trouble Finding Your Lab's Safety Data Sheets?

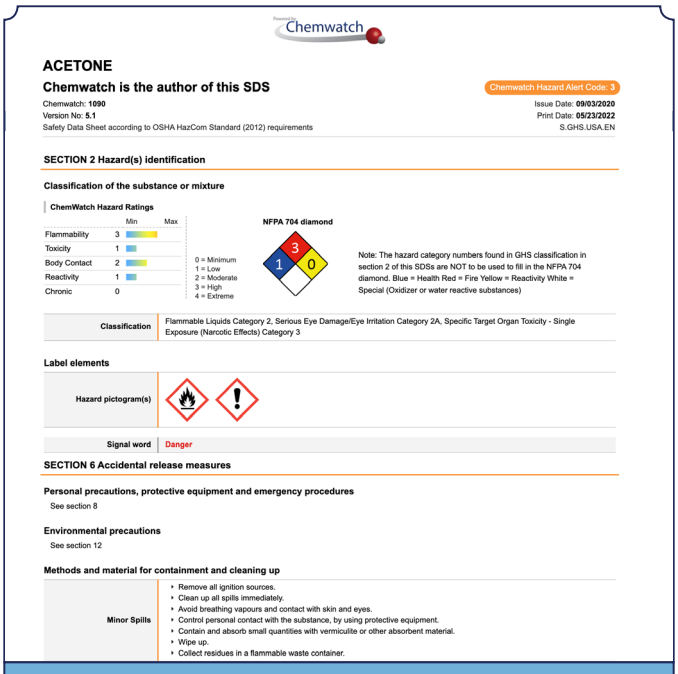
Try Searching With ChemWatch!

***By: David Skorodinsky** (Systems Analyst)*

Safety Data Sheets (SDS) provide essential health and safety data that is crucial for understanding how to handle a chemical and respond when a potentially dangerous incident occurs. Some SDS sections include hazard identification, chemical properties, appropriate first-aid measures, and much more. These sections were created to keep individuals informed and safe when working with chemicals. Therefore, a copy of the relevant SDSs should always be available for reference when working with hazardous materials.

Chemical manufacturers and importers are required to provide an SDS with all shipments. However, if a copy is needed and unavailable, individuals should utilize the ChemWatch System to find the desired SDS. ChemWatch provides an SDS database that stores vendor-supplied and ChemWatch-created SDSs that users can search and use.

Researchers should not forget to save and print the SDS to either refer to it again in the future or provide it as a reference for other laboratory members. One can simply click the "Download" or "Print" button found in the top right corner above the SDS to save or print a copy.


Chemwatch

ACETONE

Chemwatch is the author of this SDS

Chemwatch Hazard Alert Code: 3

Chemwatch: 1090
Version No: 5.1
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: 09/03/2020
Print Date: 05/23/2022
S.GHS.USA.EN

SECTION 2 Hazard(s) identification

Classification of the substance or mixture

ChemWatch Hazard Ratings

	Min	Max
Flammability	3	
Toxicity	1	
Body Contact	2	
Reactivity	1	
Chronic	0	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

NFPA 704 diamond

Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification: Flammable Liquids Category 2, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3

Label elements

Hazard pictogram(s)

Signal word: Danger

SECTION 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures
See section 8

Environmental precautions
See section 12

Methods and material for containment and cleaning up

Minor Spills
- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.
- Contain and absorb small quantities with vermiculite or other absorbent material.
- Wipe up.
- Collect residues in a flammable waste container.

Safety Data Sheets contain valuable details about a chemical's properties and provide a simple way for users to find important health and safety information. With ChemWatch, users can locate relevant SDSs and use the information to maintain a safe environment and promote best practices.

The Fast & Easy Way Find, Print, and Share Your Safety Data Sheets Today!

Locate & Access ChemWatch:

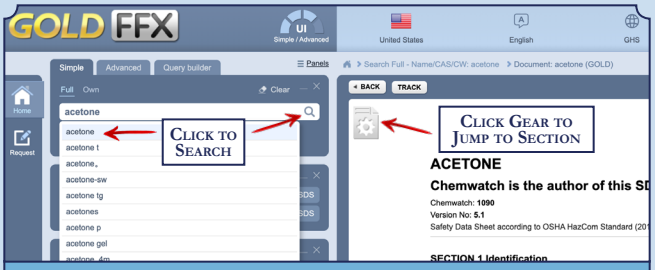
- In your preferred Web Browser, navigate to the EH&S SDS Info Page.
- Scroll to the bottom of the page and click on the ChemWatch Safety Data Sheets (SDS) - Online Search link to open the ChemWatch Database.
- Please Note: Individuals need to be connected to a Columbia University Network to access the ChemWatch Database. This can be done via a University Desktop or by connecting via a Virtual Private Network (VPN).

Search for Your Desired Chemical:

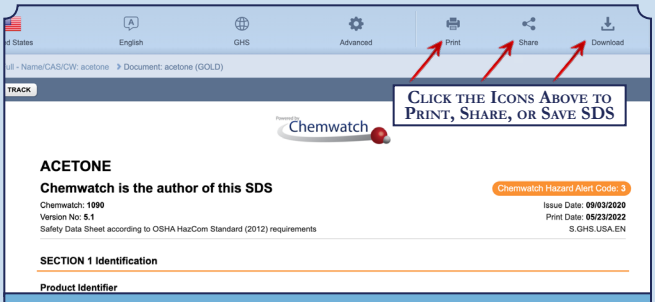
- Using the search bar on the home page, search for Chemicals by their trade name, the Chemical CAS number, or the manufacturer/supplier.
- Generally, the CAS number is the preferred searching method to ensure the correct compound has been selected.
- The auto-complete function may provide you with a list of similar materials.
- Select the chemical name from the drop-down list that best fits your interest OR click the Grey magnifying glass to the right of the search field.

View, Print, & Save Your SDS:

- You can navigate through the various sections of the SDS by scrolling through the document or by clicking the Grey "gear" icon near the top left corner to jump to a particular section of SDS.
- Once you have finished reviewing the document, you can print, save or send the SDS conveniently using the icons available on the screen.



When searching for a chemical by name, ChemWatch may generate a list of recommended chemicals based on what you have entered. Once you select a chemical, you can jump to specific sections in the SDS by clicking on the Grey Gear in the upper corner of the document.



ChemWatch makes it easy to Print and Share SDS with your peers. Simply click the Print, Share, or Download icons on the top of the screen!

SafetyMatters Editorial Staff:

Kathleen Crowley, Robert Giordano, Chris Pitoscia, Pam Shively

View Our Newsletter Online at: Research.Columbia.edu/SafetyMatters-Newsletter
Please share questions or comments with us at newsfeedback@columbia.edu