

Naval COVID-19 Rapid Response Team (NCR2T) Brief



The content in this brief are intended to be suggestions for best practices and procedures in the decontamination of work spaces and ships. These recommendations were pulled from Naval Sea Systems Command's instructions to the Fleet to ensure consistency in the decontamination process and the protection of U.S. Sailors and Fleet equipment. For private industry partners supporting U.S. Navy availability contracts, any change in current procedure that requires a modification in contract will need to be addressed through Commander, Navy Regional Maintenance Center.

Information valid as of April 21, 2020.

In the wake of the COVID virus crisis, NAVSEA is seeing a flood of potential products/ideas that could help eliminate the virus from our ships and facilities. To help us sort through these, including potential long term impacts to our ships and systems, and get the best products shipboard as soon as possible, OPNAV asked NAVSEA on April 4, 2020 to lead a rapid response cell that will quickly identify technologies/solutions that can help us clean/eliminate the COVID virus from our ships. This effort is being executed with assistance from all of NAVSEA, Navy, DoD, Industry and Medical Community. NCR2T's approach is to identify and deploy best practices, products and procedures to combat COVID-19 and develop crew/personnel areas that are free of COVID-19. This approach develops rings of defense/screening to prevent COVID-19 from being introduced to the ship/facility. With rings of defense in place, we will develop methods to support of normal operations that must continue to support our sailors. This will leverage screening protocols for personnel and decontamination procedures for material. If an individual develops COVID-19, procedures for the decontamination of affected areas of the ship/facility will be ready and deployed to minimize the risk of spread.

Naval COVID Rapid Response Team (NCR2T) Teams:

- **New Ideas and International Best Practices** - This team is central collection and initial assessment of efficacy and feasibility. Sub-team is focused on understanding and leveraging international practices/capabilities (Hellman). Provides viable potential solutions to other teams.
- **Validation/Test** - Leverage Chem/Bio expertise, determine most effective, shortest duration method to validate efficacy and deployment.
- **Interface** - Leverage information and cooperative solutions, methods and with industry, medical, DoD, EPA, CDC, Fleet. (DoD, BUMED, medical, EPA, other agency, fleet)
- **Logistics** - Right products and tools delivered to right point.
- **Shore Support of Ship** - (CAPT Patrick (Shane) Brown NSLC): Best methods to ensure required shore-side support of ships is provided within the 'rings of defense' construct.
- **Deployment** – provides executable procedures/methods to the Fleet.
 - BUMED/CDC Best practices deployment
 - Cleaners/Methods: what, where, best practices, leverage existing knowledge of infection control procedures immediately , but do not dismiss “out of box” methods
 - Usage: procedures including PPE (best practices, approach/method, disposal)
 - Best practices for living spaces and common areas
 - Incoming Material/items, methods/best practices to: Sanitize prior to delivery to ship? Segregation, disinfection, delivery post disinfection, disposal of packaging

Assumptions guiding the NCR2T as it develops Navy Guidance

- **COVID-19 is spread mainly from person-to-person during close exposure with a person infected with the disease.**
- **The infected person produces respiratory droplets by coughing or sneezing.**
- **The droplets can land in the mouths, noses, or eyes or possibly be inhaled into the lungs of people who are within close proximity.**
- **Airborne transmission from person-to-person over long distances is highly unlikely.**
- **Will live for some period of time on surfaces, depending on the material.**
- **No additional cleaning and disinfecting is necessary if more than 7 days have passed since a suspected or confirmed COVID-19 person has been in a particular space.**
- **The virus may still exist on surfaces where infected persons may have been in contact if a period of 7 days has not passed.**
- **Supplies delivered to ships are assumed to be handled IAW good disease preventative measures and can be handled after a disinfection or after 3 days have passed.**
- **Navy will assume a “ringed defense” posture to control and screen for COVID off ships as a first priority.**

Preventative Measures



- Enforce personal hygiene practices and personal distancing measures.
- Screen crew and personnel for COVID-19 symptoms prior to entering vessels.
- Refine delivery/acceptance procedures to limit contact with those who may be infected.
- Dispose of (if one-time use) or sanitize personal protective equipment (PPE) after use and prior to storing PPEs in common areas/workspaces.
- Continue to emphasize and enforce standards.
- Report cases or suspected cases IAW Navy and local policy.
- Ensure COVID-19 preventative and disinfection procedures receive widest dissemination and at all levels.

- For large area cleaning of habitability spaces (non-machinery or propulsion spaces):
 - Use garden type sprayer on fine mist to coat the surface.
 - Allow to air dry. Goal contact time is 10 minutes.
 - NAVSEA recommended products are quaternary ammonium based disinfectant cleaners. These compounds are well known, have minimal impact to shipboard materials, and use the same active ingredients as common non-bleach wipes.
- For hand cleaning:
 - Quaternary Ammonia Products are preferred.
 - Alcohol based solutions are effective on bare metal surfaces, but may soften coatings
 - Diluted solutions of bleach or calcium hypochlorite is effective but not preferred due to Chloride residue.
 - DO NOT USE on or around engineering equipment or electronics enclosures due to the propensity for chloride-induced stress cracking in steel.
- To ensure maximum potency, use products within their shelf life. Ensure products are sealed when not in use to prevent evaporation of active ingredients.
- Never mix products (i.e., bleach and ammonia). Hazardous vapors or oxidizing reactions can be produced as a result of improper mixing of chemicals.
- Disinfectant wipes are not to be flushed down the sewage system and are to be treated as HAZMAT/HAZWASTE and disposed of accordingly.

Further Recommendations

- Because airborne person-to-person transmission is unlikely, we do not recommend turning off ventilation systems, as this may create condensation on ship systems.
- Our guidance tends to be conservative. As more information becomes available, we will revise recommendations as appropriate.
- When cleaning multiple areas, operators should change PPE prior to moving into a new area to prevent cross-contamination.
- For large area cleaning with a sprayer PPE includes: Tyvek suit, mask, gloves, boots, gloves, and eye protection.
- Ensure cleaning equipment used during clean-up procedures is cleaned prior to entering a new space.
- **DO NOT APPLY ANY DISINFECTANT TO ANY SUBSISTENCE OR MEDICAL SUPPLIES.** These products are controlled and risk is low.
- We are seeking innovative ways to combat COVID-19. If you have an idea on how to better accomplish this, contact us at defeatCOVIDideas.fct@navy.mil.

Decontamination of Plastic-Wrapped Cargo



- Cargo properly wrapped are reasonably protected from accidental exposure.
- To the maximum extend possible, ship/receive cargo as one unit.
- **PPE:** Tyvek suit, chemical splash goggles and gloves, respirator.
 - Respirator wearers should be properly trained and fitted to maximize safety.
- Scissors for cutting – box cutters may damage cargo's contents.
- At minimum for those mixing/diluting, wear non-vented splash goggles and face shield, as well as chemical resistant gloves.
- 12'x12' tent with wall recommended for set-up to prevent wind interference.
- Use of ladder may be optimal for certain cargo heights.
- Allow all surfaces at least ten minutes contact time with disinfectant to ensure effectiveness.

- **Ultra Violet-C lights for sanitation**
 - Naval Sea Systems Command is assessing effectiveness of procedure.
- **Conveyor belts**
 - Modifications of current belts may be a possible solution to ensuring they are effective on larger ships.
- **UV-C Wands**
 - Multiple units are on order and will be pushed out to the fleet.
 - There are risks associated with some wands that have mercury bulbs. We will provide more details as they become available.
- **UV-C large area decontamination units**
 - We are currently assessing effectiveness and developing concepts of operations.
- **Standardizing disinfecting guidance**
 - Addressing large scale disinfecting solutions in engineering and C5I spaces.

Frequently Asked Questions



Q: How do we prevent confusion on products authorized for COVID-19 decontamination?

A: It is up to leaders and supervisors to ensure operators know which products are authorized and what the exceptions are. A list of authorized products are provided as an addendum to this brief. Quaternary Ammonium based products are preferred.

Q: How often should a workspace be sanitized for COVID-19?

A: Once a workspace has been sanitized, and if proper preventative measures are in place, it does not have to be sanitized again. Daily cleaning is recommended to maintain cleanliness and more frequently based on usage.

Q: Are foggers effective as a means to sanitize a space for COVID-19?

A: Due to the nature of the virus, we recommend against the use of foggers.

Q: Why are recommendations so stringent?

A: While we recognize that these recommendations come with cost and impact to daily operations, we are erring on the side of caution because the stakes to human lives and equipment are so high. As we get more feedback on these concepts of operations, we will be able to appropriately adjust.

Q: How often will these recommendations be updated?

A: As we publish new instructions to the Fleet, we will update our industry partners in a timely manner. In the interest of sharing and transparency, we welcome your questions, ideas and feedback at defeatCOVIDideas.fct@navy.mil

- Preferred Quaternary Ammonium Disinfecting Agents
 - a. NSN 6840-00-201-2505, MIKRO-QUAT INC. ECOLAB, EPA-N list item 1677-21, quaternary ammonium ethanol blend, 1 gallon, cage code 85884. This product should be diluted at a ratio of 1 ounce per 1 gallon per manufacturer specifications.
 - b. NSN 6840-01-604-6411, CAVICIDE, METREX RESEARCH, quaternary ammonium-isopropanol blend. EPA-N list item 46781-6. This product should be used as received; no dilution is recommended per manufacturer's specification.
 - c. LYSOL BRAND I.C. quaternary ammonium deodorizing disinfectant cleaner, EPA-N list item 675-54; 24 ounce bottles, no NSN. This product should be diluted at a ratio of 1:256 (0.5 ounce concentrated solution diluted with 1 gallon of water) per manufacturer's specification.
 - d. DECON 7 part 1. EPA-N list 89833-3; no NSN (note: part 1 consists of a blend of quaternary ammonium compounds and surfactants). This product should be diluted at a ratio of 1:1 (1 gallon of concentrated solution diluted with 1 gallon of water) per manufacturer's specification.
 - e. MAQUAT 2420-10 EPA-N list 10324-194. No NSN. This product should be diluted at a ratio of 1.5 ounce per 1 gallon of water per manufacturer's specification.
 - f. NSN 7930-01-589-0598, multi-surface sanitizer (VIREX II 256), DIVERSEY, EPA-N list item 70627-24, quaternary ammonium ethanol blend, 6-32oz, cage code 325G4. This product should be diluted at a ratio of 1:256 (1 ounce concentrated solution diluted with 2 gallons of water) per manufacturer's specification.
 - g. Oasis 146 MULTI-QUAT sanitizer; NIIN 01-589-3786; this product should be diluted at a ratio of 2 ounces per gallon of water (this is lower than the manufacturer's recommendation).
 - h. NSN 6840-01-398-0974 ECOLAB disinfectant cleaner 2.0. This product should be diluted 2.0 ounces of the concentrated solution with 1 gallon of water (as recommended by the manufacturer).