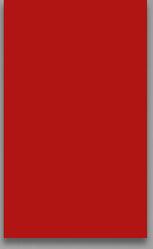


Safe Cleaning and Disinfecting in the Age of COVID

RECOMMENDED PRACTICES AND PRODUCTS TO MINIMIZE EXPOSURE TO HARMFUL CHEMICALS



COVID Transmission



Typically by surface contact or airborne particles

Airborne transmission is most common

Some of the best ways to protect yourself from COVID 19 are...

- 1) social distance
- 2) wear a mask
- 3) avoid crowds
- 4) ventilation

What is the role of cleaning and disinfecting surfaces as it pertains to COVID transmission?

Cleaning- is always important, at home and in public spaces.

Disinfecting - important on high touch point surfaces, especially in group settings, including communal work spaces (offices) and shared housing.

Surfaces are not the primary source of transmission, but they are still a possible source of transmission. There is conflicting information about how long coronavirus remains active on different surfaces.

Consider where you are and how vulnerable your exposed population is when determining the frequency of disinfecting.

Concerns on Cleaners and Disinfectants

- ▶ More cleaning and disinfecting = more exposure to chemicals
- ▶ Exposure to the chemicals utilized in many disinfecting products can lead to serious health problems
 - ▶ Skin and eye irritation
 - ▶ Cause and trigger asthma
 - ▶ Possible reproductive and genetic harm
- ▶ How much disinfecting is too much?



Cleaning / Sanitizing / Disinfecting

What's the difference?

- ❑ **Cleaning** physically removes dirt, bacteria, and viruses
- ❑ **Sanitizing** lowers the number of germs on surfaces
- ❑ **Disinfecting** kills microbial life like bacteria and viruses

You can not disinfect a dirty surface
Always clean before sanitizing or disinfecting!



Safety Measures when Using Cleaning and Disinfecting Products

- ▶ Clean Before you Disinfect
- ▶ Don't over-use disinfectants
 - ▶ Cleaning is often enough
 - ▶ Target disinfecting
- ▶ Never Mix Cleaning or Disinfecting Chemicals
- ▶ Wear personal protective equipment like gloves and glasses
- ▶ Provide plenty of ventilation
- ▶ Allow for appropriate time in contact with the surface "dwell time"
- ▶ Use safer ingredients
 - ▶ Avoid Bleach and Quaternary Ammonium Compounds (QUATS)



Clean First, Then Disinfect

Dirt particles on the surface can shelter microbes from disinfectants and prevent full contact with sanitizers and disinfectants.

If a product is both a disinfectant and cleaner, use it once as a cleaner and again as a disinfectant



Clean Surfaces Regularly & Disinfect Sparingly

When done properly, cleaning with soap and water is often enough. Why?

- ▶ Risk of contracting COVID through surface contact is low. Reducing airborne transmission is most important.

<https://www.npr.org/sections/health-shots/2020/12/28/948936133/still-disinfecting-surfaces-it-might-not-be-worth-it>

Soap and Water: More than Just Cleaning

- ▶ In the case of coronavirus, soap and water not only removes dirt and viruses from the surface but because coronavirus an “enveloped virus”, a virus contained within a lipid layer. Soap and water break through that lipid layer, which is often enough to inactivate the virus.

<https://medical.mit.edu/covid-19-updates/2020/06/soap-and-water-best-weapons>



When should you consider disinfecting?

Certain facilities, like schools and hospitals, are required to disinfect, according to government guidelines.

Where else should you consider disinfection?

- ▶ Public places like restaurants and stores
- ▶ Public restrooms
- ▶ Semi-public places, like offices or shared housing, where multiple people share common space

Think about disinfecting **high touch-point areas** like doorknobs, light switches, handrails and shared restrooms

Disinfect if there is a spill or accident involving bodily fluids: blood, urine, feces, vomit or other fluids

What about your home?

- ▶ If someone in your household may have coronavirus
- ▶ If someone with coronavirus or suspected coronavirus has been in your home

Don't disinfect food contact surfaces

In general, don't use disinfecting products on food contact surfaces, unless it is specifically identifies as a disinfectant that can be used for food surfaces.

- ▶ Why? Some chemicals do not evaporate and will linger long after use
- ▶ Food contact disinfectants will often require you to rinse after use.
- ▶ Think about food contact surfaces as:
 - cutting boards
 - pots and pans
 - dishes, cutlery, glasses, cups

Do not put food directly on counters that have been disinfected.

Never Mix Bleach with anything except water!



Bleach + Ammonia = Can be lethal!

Bleach + Hydrogen Peroxide = Dangerous

Bleach + Acid (in some toilet bowl cleaners) = Can be lethal!

Bleach + Vinegar = Dangerous

Bleach + Isopropyl Alcohol = Dangerous

Even safer chemicals can be dangerous when mixed:

Hydrogen Peroxide + Vinegar = Dangerous

Low levels of exposure can cause eye, nose throat irritation and respiratory issues.

At very high levels death can occur



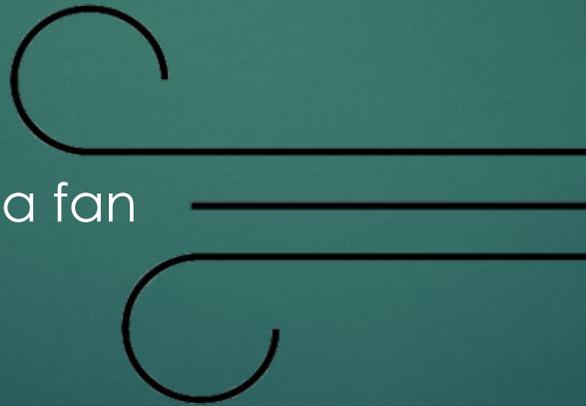
PPE and Ventilation

Follow the instructions on the label.

Use appropriate personal protective equipment (PPE):
Label will describe PPE: gloves, masks, goggles, apron

Wash hands after disinfecting, even if you are wearing gloves. Dispose of gloves directly into trash or wash right away.

Open windows / doors, turn on a fan



What is “Dwell Time”?

Sanitizing and disinfecting products need to be in contact with germs and viruses for a scientifically determined amount of time to be effective.

Spray....Wait...Wait some more...Wipe!

Up to 10 minute dwell time

Must stay wet during dwell time

Check the label!



Not sure if your product is effective against Coronavirus? The EPA's "List N" can help

Search for products by the EPA's registration number or by active ingredient. These things can be found on the label.

Use this list to find out if your product is effective against Coronavirus.

The EPA expects all the chemicals and associated products on List N to kill Coronavirus when used according to the label directions.

It is not, however, an indication that the product is "safe."

You can find List N at: [List N Tool: COVID-19 Disinfectants | US EPA](#)

Advice from EPA on how to look up chemicals on list N:

https://www.epa.gov/sites/production/files/2020-12/documents/list_n_how-to_infographic_final_0.pdf

Bleach and Quats (Quaternary Ammonium Compounds)

1. Bleach and Quats are Disinfectants not Cleaners
2. Will kill most microbes
3. Can linger on surfaces long after cleaning
4. **Do not play well with others:** Don't mix with other products- bleach especially
5. Can lead to antibiotic resistant bacteria

Chlorine Bleach (You may also see ingredient listed as “**sodium hypochlorite**” on label) – A commonly used disinfectant, chlorine bleach can cause:

- mild irritation or corrosive injury if exposed to skin or eyes
- can cause or trigger asthma
- when combined with acids or ammonia, can cause serious upper respiratory damage or even death.

Quaternary Ammonium Compounds (Quats) - Products using these compounds are among the most extensively used. Quats are:

- skin and lung irritants
- can contribute to asthma and breathing problems.
- may also cause fertility issues.

How to Spot a Quat: Identifying Quaternary Ammonium Compounds

Check the active ingredients on the label; quats usually end in end in “**-onium chloride**”, for example:

Benzalk**onium chloride**

Alkyl dimethyl benzyl ammon**ium chloride**

Didecyldimethylammon**ium chloride**

Quats are often used in disinfecting wipes:

- Don't use wipes with quats on skin or food!
- Don't let kids clean with disinfecting wipes--remember, disinfectants are pesticides!

Safer Alternatives: Safer Disinfectant Chemicals

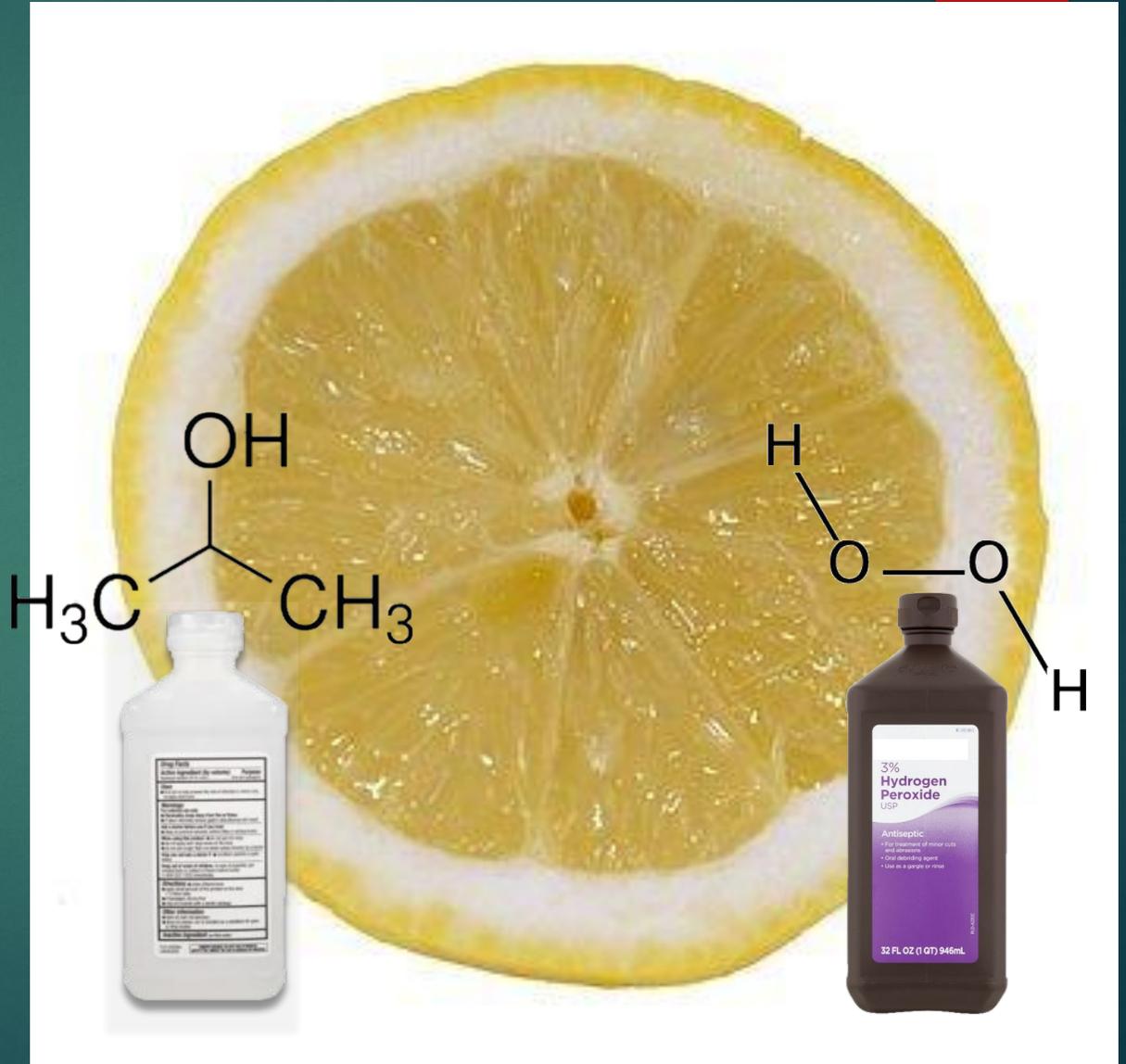
Alcohols

- Isopropyl Alcohol (isopropanol) 70%
- Ethyl Alcohol (ethanol) 70%

(**No** to: Methyl Alcohol (methanol)-
Methanol is a carcinogen!)

- Hydrogen peroxide
- Citric acid
- L-Lactic acid
- Peracetic acid
- Sodium bisulfate
- Hypochlorous acid

What about Thymol?



Safer alternatives: Environmentally preferable product lists

- ▶ **Toxics Use Reduction Institute**

Safer disinfectants that are effective against covid:

https://www.turi.org/Our_Work/Cleaning_Laboratory/COVID-19_Safely_Clean_Disinfect/Safer_Disinfecting_Products/List_of_Safer_Disinfecting_Products

- ▶ **Environmental Working Group**

Safer disinfectants that are effective against covid

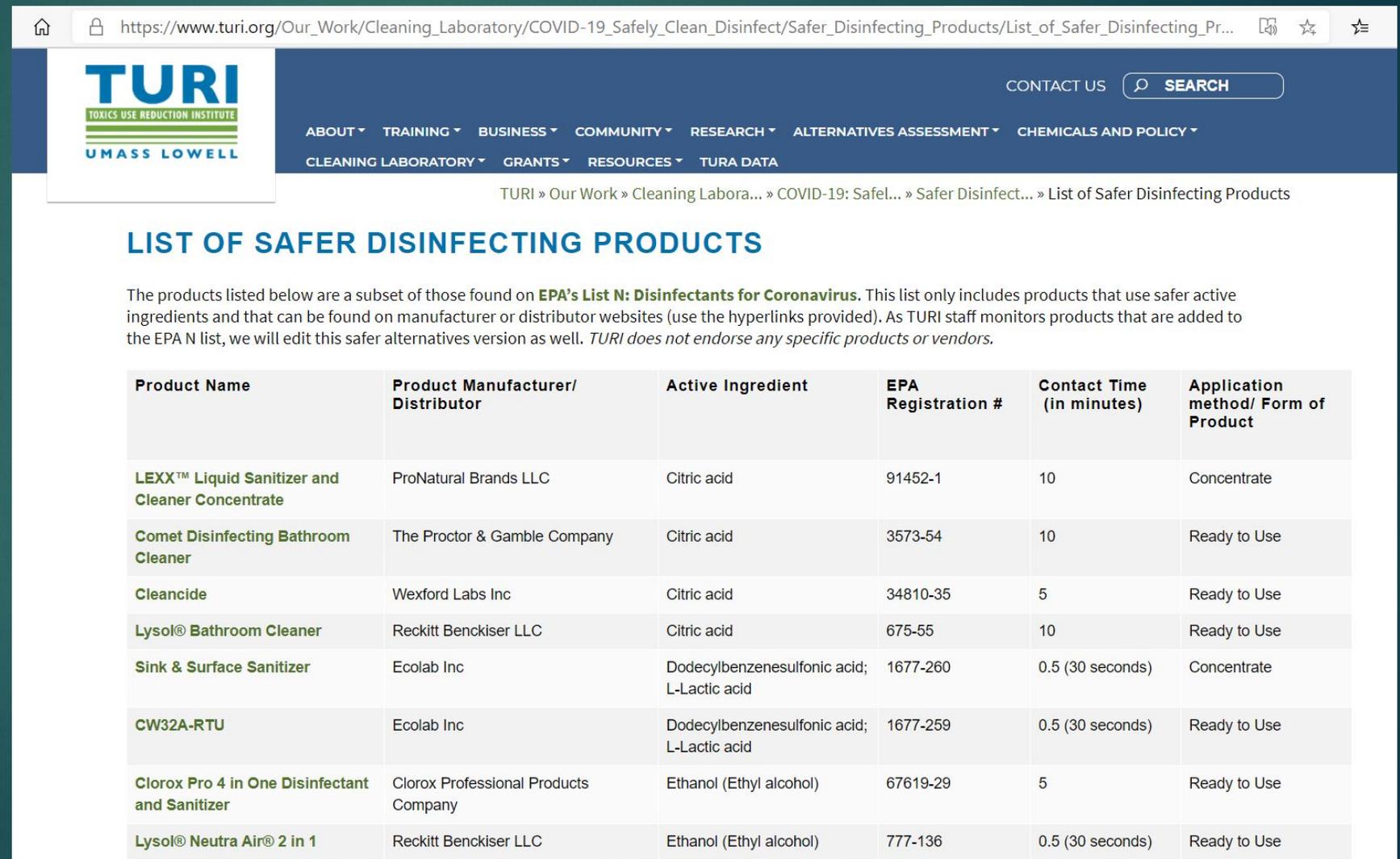
- ▶ <https://www.ewg.org/news-and-analysis/2020/03/16-effective-and-safe-products-guard-against-coronavirus>

AND

<https://www.ewg.org/guides/cleaners/> (Safer products in general, not just those that are effective against covid)

Toxics Use Reduction Institute's list of safe(r) alternatives

[List of Safer Disinfecting Products / Safer Disinfecting Products / COVID-19 Safely Clean & Disinfect / Cleaning Laboratory / Our Work / TURI - TURI - Toxics Use Reduction Institute](#)



The screenshot shows the TURI website's navigation menu and a list of safer disinfecting products. The navigation menu includes links for ABOUT, TRAINING, BUSINESS, COMMUNITY, RESEARCH, ALTERNATIVES ASSESSMENT, CHEMICALS AND POLICY, CLEANING LABORATORY, GRANTS, RESOURCES, and TURA DATA. The breadcrumb trail indicates the current page is 'List of Safer Disinfecting Products' under 'Safer Disinfecting Products' and 'COVID-19: Safely Clean & Disinfect'.

LIST OF SAFER DISINFECTING PRODUCTS

The products listed below are a subset of those found on [EPA's List N: Disinfectants for Coronavirus](#). This list only includes products that use safer active ingredients and that can be found on manufacturer or distributor websites (use the hyperlinks provided). As TURI staff monitors products that are added to the EPA N list, we will edit this safer alternatives version as well. *TURI does not endorse any specific products or vendors.*

Product Name	Product Manufacturer/ Distributor	Active Ingredient	EPA Registration #	Contact Time (in minutes)	Application method/ Form of Product
LEXX™ Liquid Sanitizer and Cleaner Concentrate	ProNatural Brands LLC	Citric acid	91452-1	10	Concentrate
Comet Disinfecting Bathroom Cleaner	The Proctor & Gamble Company	Citric acid	3573-54	10	Ready to Use
Cleancide	Wexford Labs Inc	Citric acid	34810-35	5	Ready to Use
Lysol® Bathroom Cleaner	Reckitt Benckiser LLC	Citric acid	675-55	10	Ready to Use
Sink & Surface Sanitizer	Ecolab Inc	Dodecylbenzenesulfonic acid; L-Lactic acid	1677-260	0.5 (30 seconds)	Concentrate
CW32A-RTU	Ecolab Inc	Dodecylbenzenesulfonic acid; L-Lactic acid	1677-259	0.5 (30 seconds)	Ready to Use
Clorox Pro 4 in One Disinfectant and Sanitizer	Clorox Professional Products Company	Ethanol (Ethyl alcohol)	67619-29	5	Ready to Use
Lysol® Neutra Air® 2 in 1	Reckitt Benckiser LLC	Ethanol (Ethyl alcohol)	777-136	0.5 (30 seconds)	Ready to Use

Safer alternatives: 3rd party certifications



Green Seal Green Seal

1st green cleaning certification

Founded in 1989

Household cleaners

Institutional cleaners

Cleaning services

Hotels/restaurants

Some bldg materials

Paper products-some

Searchable database

<https://www.greenseal.org/certified-products-services>



Safer Choice Environmental Protection Agency

Federal agency

Cleaning Products

Searchable database

<https://www.epa.gov/saferchoice/products>

Can search by home/business use

Different types of cleaners

Design for the Environment

Sanitizers/disinfectants

Searchable database



DfE-Certified Disinfectants | Pesticide Labels

Can search just for disinfectants effective on the virus that causes covid



Ecologo Underwriters Laboratory

International safety testing nonprofit

Cleaners/sanitizers/disinfectants

& ...

Building products, high tech

Building products, high tech/office, personal care, toys, other

Less environmental impact

No searchable database

Recap

- ▶ Disinfectants can be harmful to your health and are linked to respiratory and reproductive harm
- ▶ Always clean before disinfecting
- ▶ Take protective measures for yourself and others when using disinfectants.
- ▶ Disinfecting may not be necessary, soap and water may be enough- use chemicals sparingly
- ▶ Choosing safer alternatives – Toxics Use Reduction Institute
- ▶ Assess the amount of disinfecting that you feel is appropriate for your situation

Interactive:

Let's look at your products.

- ▶ Grab a cleaning/disinfecting product from under your sink.
- ▶ is it a cleaner disinfectant or both
- ▶ Does it have a seal from the EPA's Safer Choice program?
- ▶ What are the active ingredients?
- ▶ Does it have Bleach or Quats?
- ▶ Can you find the EPA registration number?
- ▶ What is the "dwell time"?
- ▶ Is it effective on COVID 19?



Additional Resources

Centers for Disease Control Guidelines for Homes:

<https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/disinfecting-your-home.html>

CDC Fact Sheet for Homes (good summary of CDC guidance):

<https://www.cdc.gov/coronavirus/2019-ncov/downloads/disinfecting-your-home.pdf>

Department of Environmental and Occupational Health Sciences, University of Washington, Safer Cleaning, Sanitizing and Disinfecting Strategies to Reduce and Prevent Covid-19 Transmission

Informed Green Solutions: Choosing Safer Disinfectants Active Against the Coronavirus

Informed Green Solutions Fact Sheet: How to Read a Cleaning Disinfecting Product Label

Informed Green Solutions Fact Sheet: What is Indoor Air Quality and how is it affected by cleaning, sanitizing and disinfecting

Women's Voices for the Earth, Quit the Quats

Green Seal's Guidelines for Safer Covid-19 Cleaning & Disinfection (This is written for facility managers/housekeeping professionals, but has general guidance that is useful including information about newer cleaning/disinfecting devices. GreenSeal has separate guidance for schools on their website.)

Questions/thoughts?

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