10 Reasons To Eliminate Glutaraldehyde Fact Sheet

A FACT SHEET OF THE SUSTAINABLE HOSPITALS PROJECT

SHP is a project within the University of Massachusetts Lowell Center for Sustainable Production, providing technical support to health care.

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Hospital disinfection is serious business. When glutaraldehyde was first marketed in the early 1960's[1], it was good news. Effective alternatives were sought to the highly toxic, irritating and carcinogenic disinfectant formaldehyde. However, reports of serious health effects from glutaraldehyde exposure were published shortly thereafter[2] and ever since. Today, 40 years later, there are alternatives that offer high level disinfection while protecting health care workers and the environment.

Reasons for Elimination

1. Glutaraldehyde (GA) is a potent occupational skin irritant and sensitizer.[3, 4]
2. Glutaraldehyde exposure in hospitals is a recognized cause of occupational asthma[5-10] in many industrialized nations (England, Australia and others) although it is not regulated in the United States. Studies demonstrate that adverse respiratory health effects may occur at levels below 0.2 ppm, the current NIOSH Recommended Exposure Limit (REL).[11, 12]
3. Anecdotal reports suggest that GA exposure has been associated with the development of chemical sensitization disorders.[13] This condition results in an intolerance not only to glutaraldehyde, a sensitizer, but to many other classes of chemicals as well.
4. Patients, visitors, and hospital staff may be needlessly exposed to glutaraldehyde vapors in patient rooms and clinical areas where open bins or poorly ventilated reprocessing units are in use.
5. Alternatives to glutaraldehyde are available that maintain infection control standards[14-17] and do not cause undue wear and tear on sensitive medical devices.
6. Alternatives to glutaraldehyde are available. These alternatives are safer both for workers (the risk of skin and respiratory sensitization is avoided) and for the environment.
7. It's smart to stay ahead of the game. OSHA is currently developing a Permissible Exposure Limit (PEL) for glutaraldehyde. Observers suggest that a 0.05 ppm ceiling limit may result due to evidence that respiratory sensitization can still occur at the NIOSH REL of 2 ppm. Other countries have lowered or are in the process of lowering their "ceiling" limits to 0.1 ppm or 0.05 ppm. In the US, the American Congress of Government Industrial Hygienists (ACGIH) recently lowered their Threshhold Limit Value (TLV – 15 min STEL) to 0.05 ppm.[18]
8. The alternatives will be cheaper in the long run:

   Direct costs of using glutaraldehyde include: special ventilation hoods, improved general ventilation, construction or purchase of enclosed disinfection stations, personal protective equipment, education and training programs, ongoing monitoring programs, chemical neutralization solutions, maintenance of a glutaraldehyde emergency spill team, and work practice aids such as absorbent mats, pouring nozzles, etc.

   Indirect costs — largely overlooked — include: employees with occupational dermatitis, employees with occupational asthma, lost work time, workers' compensation, costs of replacement labor, costs of managing staff, patient and community relations. Future costs may include: compliance with a new OSHA PEL and action from local POTWs (publicly operated treatment works) regarding the dumping of aldehydes, such as glutaraldehyde, down the drain.[19, 20]

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9. A plan to eliminate or phase-out glutaraldehyde is consistent with a public health approach: PREVENTION. It makes sense to eliminate highly toxic and sensitizing substances from the hospital environment when alternatives exist that are feasible, effective and sustainable.
10. Glutaraldehyde has successfully been eliminated — or dramatically reduced — in dozens of hospitals. The success of these hospitals is the best testimony for the benefits of change.

For more information

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Notes

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