

Safe Use of **Biological** Degreasing Stations

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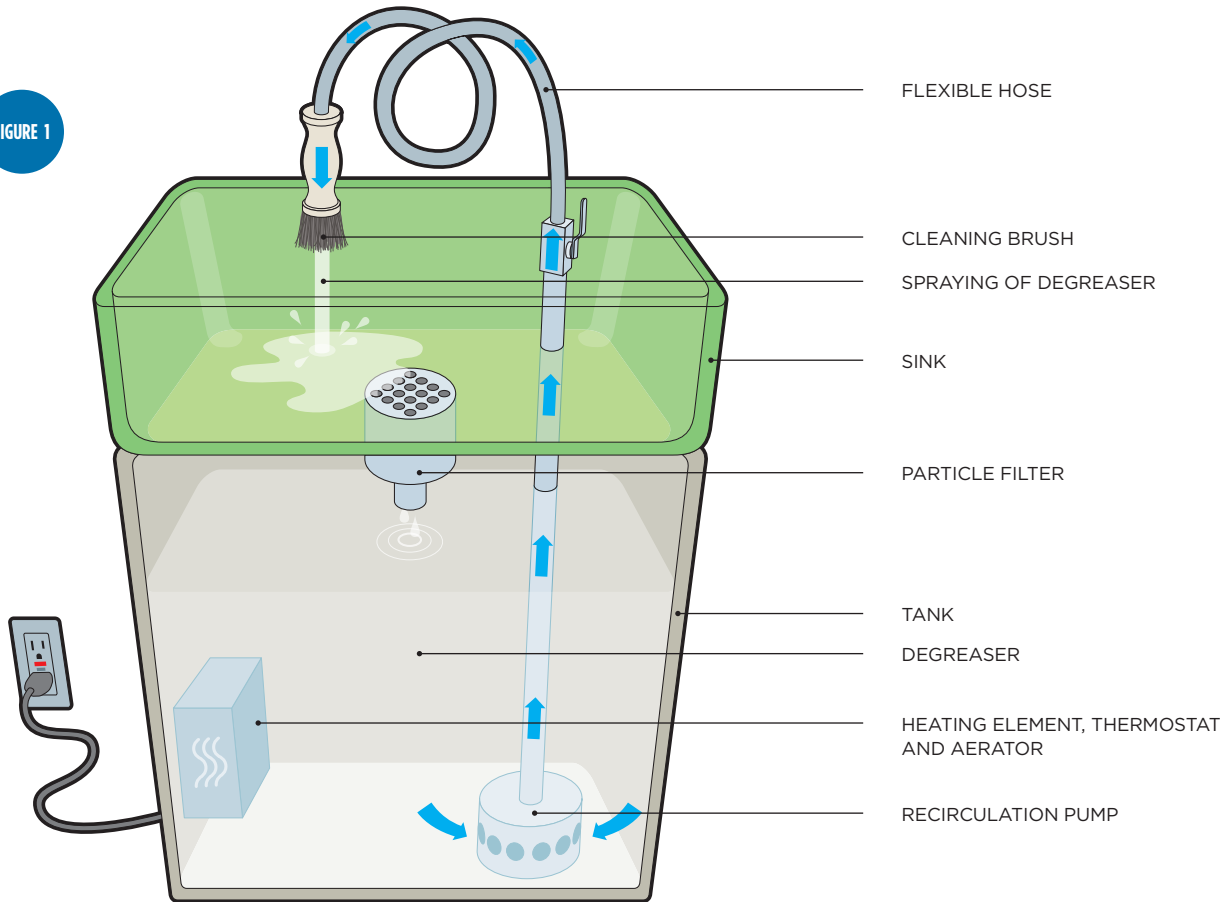
This prevention fact sheet is intended for occupational health and safety practitioners in the motor vehicle garage sector and in other workplaces that do mechanical maintenance and use biological degreasing stations.

Biological degreasing stations — or bioremediating parts washers — can be used in place of traditional solvent-based degreasing stations. They help reduce occupational and environmental exposure to toxic or flammable substances. However, certain precautions should be followed to ensure that they are used safely.



This small poster is designed for display in the workplace.

FIGURE 1



Description of a biological degreasing station

A biological degreasing station is a tank with a sink on top of it where workers degrease metal parts and other materials by hand. The degreasing fluid (degreaser) is a water-based preparation containing detergents and bacteria. The detergents dislodge the oil and grease on the parts, while the bacteria digest them. A biological degreasing station has the following components (see Figure 1):

- a tank, either fixed or on wheels, with a 70 L to 160 L capacity, and containing the degreaser;
- a heating element that keeps the degreaser at a temperature of approximately 40°C;
- an aerator that supplies the bacteria with oxygen;
- a pump that recirculates the degreaser to the sink through a flexible hose fitted with a brush.

A biological degreasing station also has a filter that removes dirt in the form of particles.

An air blow gun is sometimes used when the cleaned parts have to be dried.

The selected bacteria can be introduced into the degreasing fluid in three different ways, depending on the station model:

- already mixed into the degreaser;
- incorporated into a filter through which the degreaser passes;
- added by the operator in the form of tablets.

Health effects and risks

Manufacturers only use bacteria that are generally harmless — namely those in Risk Group 1 — when formulating degreasers for biological degreasing stations. However, bacteria that can pose a moderate risk of infection (Risk Group 2) have been found in some biological degreasing stations during use. These bacteria, which contaminate the degreaser, most likely come from dirt on the parts being cleaned, the environment or users (for example, if they are working with bare hands). The risk of infection increases if the degreaser comes into contact with the skin or mucous membranes (due to splashes), or if the intensive or frequent use of an air blow gun creates an aerosolized spray of droplets.

Prevention measures

To use a biological degreasing station safely, you must:

- protect your skin: wear nitrile gloves and long-sleeved work clothing;
- protect your eyes: wear safety goggles;
- use a face shield if your face risks being splashed;
- avoid all contact with wounds;
- follow personal hygiene rules: wash your hands after removing your gloves, before touching your mouth with your hands or handling items such as beverages, food, pencils, or cigarettes that you put into your mouth, as well as before and after going to the bathroom;
- never wash your hands in the biological degreasing station.



If an air blow gun is used to dry the cleaned part, it is recommended that, in addition to the previous measures, you rinse the part first with clean water. If the parts are not rinsed, you should wear a filtering face-piece respirator (N-95 disposable mask). According to section 326 of the *Regulation respecting occupational health and safety*, the pressure of the compressed air in the blow gun must be less than 200 kPa.

Certain parts such as sanitary pumps may require rinsing before they are cleaned in the biological degreasing station.



Small poster

It is recommended that the poster be displayed near the biological degreasing station in full view of the workers.

SOURCE

D. Bégin, M. Gérin, and J. Lavoie, *Risques associés aux préparations bactériennes et enzymatiques pour le dégraissage et le nettoyage*, Report R-829, Institut de recherche Robert-Sauvé en santé et en sécurité du travail, Montréal, 2014, 87 pages.

Comments

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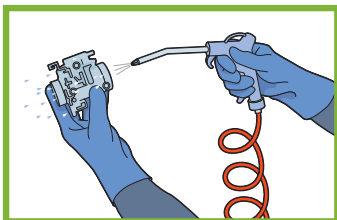


Use biological degreasing stations safely



Do you use an air blow gun?

- › If so, first rinse off the cleaned parts with clean water.
- › If not, wear a filtering face-piece respirator (N-95 disposable mask).



Air pressure less than 200 kPa



Protect your eyes

- › Safety goggles



Protect your skin

- › Nitrile gloves
- › Long-sleeved work clothing
- › Face shield, if your face risks being splashed
- › Avoid all contact with wounds



Wash your hands

- › After removing your gloves
- › Before touching your mouth with your hands or with anything else (beverage, food, cigarette, pencil, etc.)
- › Before and after going to the washroom
- › Never wash your hands in the biological degreasing station