CARWASH

CAR WORKSHOPS: A SERIOUS GAME APPROACH TO MANAGING WASTE CONSIDERED HAZARDOUS

Grant agreement no: 2014-1-ES01-KA202-004483
KA2-2014 – Cooperation for innovation and the exchange of good practices

Co-funded by the Erasmus+ Programme of the European Union

IO6-BEST PRACTICE:
“Avoid spills by automatic dosing”

*The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein*
1. INTRODUCTION

The purpose of this guide is to provide staff and owners of vehicle maintenance, repair and service workshops, with good practices in order to avoid spills of hazardous products, and to guide for implementation of good environmental practices in the company.

This document describes how companies can choose alternative ways of filling hazardous liquids such as oil, detergent etc. in trucks and cars.

Hazardous liquids are often purchased in small packages. These packages are considered as hazardous waste and every handling could cause a risk of spills. The need for an alternative is very high. This best practice is an example of an alternative.

2. BASICS CONCEPT

Workshops can choose an intermediate bulk container (IBC) to hold the hazardous liquids, instead of using small packages. With a distribution hose the hazardous liquid is taped out of the IBC and the right quantity of the product is poured directly into the reservoir of the car or the truck.

Because there is no more handling of small barrels, the spilling of hazardous liquids is avoided. An IBC can contain 600 l or 1000 l. The volume of a barrel is 100 l or 200 l. By purchasing an IBC of 1000 l you can save 5 to 10 barrels of packaging waste.
3. CONTENT: AVOID SPILLS

3.1 Consequences of spills

Spilling hazardous fluids can have a very large impact on the environment and the people handling it. In this guide the focus lies on the spilling of detergent and oil.

**Detergents** are widely used in workshops, as well to clean the shop and the working material as vehicles. To clean more efficiently, detergents can contain surfactants (surface active agent). This compound lowers the surface tension between two liquids or between a liquid and a solid. This will facilitate the dirt and oil to be removed from the surface. The use of surfactants and detergents is not without risks.

**Oil** is the most prominent in workshops. The contamination of the soil, the danger to different living organisms, the contamination of groundwater and streams, the danger to eyes and skin,… are all known negative consequences of oil spills.

<table>
<thead>
<tr>
<th>Surfactants</th>
<th>Health Hazard</th>
<th>Flammable</th>
<th>Environmental Hazard</th>
</tr>
</thead>
<tbody>
<tr>
<td>H315: Causes skin irritation</td>
<td>H304: May be fatal if swallowed and enters airways</td>
<td>H226: Flammable liquid and vapour</td>
<td>H401: Toxic to aquatic life</td>
</tr>
<tr>
<td>H319: Causes serious eye irritation</td>
<td>H351: Suspected of causing cancer</td>
<td>H411: Toxic to aquatic life with long-lasting effects</td>
<td></td>
</tr>
</tbody>
</table>

As well for the environment as for humans, spills of both detergents and oil (of any kind) have negative consequences, such as:

- Both surfactants and oil disrupt the natural protection of the skin (a lipid coating) and can cause irritation.
  - Wear appropriate protective equipment, such as gloves, protective clothing, goggles,…
- The combination of oil and surfactants can be more toxic to the environment than either alone.
  - Avoid spills of both and do not use detergent to clean up an oil spill.
- Detergents in water facilitate the penetration in the soil, which can influence the life-cycles of some aquatic organisms.
  - Avoid washing water to get into the sewer system.
- Oil soaking into the ground can cause damage to the foundations of buildings and it can kill plants and wildlife.
  - Avoid oil soaking into the ground, clean up a spill immediately with absorbents.
3.2 Social, Environmental and Financial Benefits

The following social benefits come from using bulk containers, instead of small packages.

- Less incidents while cleaning up spills,
- Less injuries to the eyes and skin of the people working in the shop,
- No raising of heavy weight, so no back pains caused by it,…

Also the environment benefits from bulk containers. Since there is

- Less risk of spills,
- Less risk of soil contamination,
- Less hazardous waste of the smaller packages.

Besides the social and the environmental benefits, there are also financial benefits to be taken into account.

- Less losses of products, so more use of the products bought
- Less costs of cleaning spills
- Less costs of removing hazardous waste
- Less costs of injuries.

4. RECALL

Automatic dosing of hazardous liquids causes less spills and avoids hazardous waste. There are as well social benefits, as environmental and financial. It also contributes to the ergonomics for the workers.