CARWASH

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

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CASE STUDIES:
“Honda ships its batteries in a safe way to the dealer”

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1. INTRODUCTION

The repairers of vehicles generate waste, thus hazardous as non-hazardous, in their activities, whether mechanical repairs, sheet metal and paint, electronic and electrical repairs, or of changing batteries and tires; since hazardous substances are used.

The car producing company HONDA EUROPE NV, located at the Langerbruggestraat 104 in Ghent, presents the following solution for a safe shipping of batteries to their dealers.

2. OBJECTIVE

Shipping of batteries to car dealers without risking leakage and causing environmental damage or health & safety risks.

3. BASICS CONCEPT

Honda has started a new activity started in the field, namely the storage and distribution of batteries (for cars, motorbikes, power equipment).

The batteries are delivered on a pallet with stretch film. At the individual level batteries go to the dealer. When handling batteries one should be especially careful not to hit any of its parts, it can generate cracks in the box to allow the output of acid. To avoid any possible leakage of acid from cracks in the battery during the transport, each battery will be individually packaged in a box containing a plastic bag filled with vermiculite. Otherwise there is an environmental risk for spill of acids of the battery that could potentially pollute the floor and water.

The packing of the batteries is done at a packaging line, equipped with the necessary ergonomic tools.

- Vermiculite is a hydrated magnesium aluminum silicate mineral which resembles mica in appearance. It is found in various parts of the world including Australia, Brazil, Bulgaria, Kenya, Russia, South Africa, Uganda, USA and Zimbabwe.
Vermiculite, when subjected to heat, exfoliates to form elongated concertina like particles which are lightweight, incombustible, compressible, highly absorbent, and non-reactive. Exfoliated vermiculite particles can have high cation exchange capacity and their surface chemistry may be modified.

Exfoliated vermiculite is used in a wide number of markets including construction, industrial, horticulture and agriculture.

- Lead-acid batteries are a rechargeable devices that store chemical energy to be released later in the form of electricity.
  They contains a liquid electrolyte compound of 35% sulfuric acid and 65% water. The electrolyte is the medium in which chemical reactions were produced that generate electric accumulative power and do that electrons circulate establishing a current flow.

The components of a new or used battery make this a residue considered dangerous to be treated with special care during handling, storage and transportation

  4. CONTENT: economic/financial, social and environmental advantages

- Economic benefit / Financial aspect
  To reduce risks to people and the environment and to avoid damage to the environment.

- Environmental advantage
  Honda dealers can reuse the vermiculite as an absorbent material in their own workshop.
  In case of damage during transport of the battery, the pollution of soil and / or other materials is reduced to a minimum.

- Social benefit
  Better working conditions