



## Rocket®Top

**Rocket®Top** is a topical deodorizer and contact agent. It is effective against sulphides and mercaptans, amines and aldehydes, as well as volatile fatty acids and ketones.

**Rocket®Top** is a completely biodegradable blend of proteins and amino acids, plant extract surfactants and emulsifiers, essential oils, mineral additives, nucleic acids, and vitamins.

**Rocket®Top** contains no alcohols, and may be used safely on any liquid or solid waste. Its applications range from landfills, compost, and leachate, to containers, equipment, walls, and floors.

### **Method of Operation**

The structure of **Rocket®Top** is based on a specific polypeptide chain and the associated proteins. The protein contains significant quantities of hydroxyl radicals (in nucleic acids) in addition to amino acids. The protein is blended in a bath of mineral and vitamin co-factors. The hydroxyl radicals in the protein facilitate oxidation reactions. Typically, the protein reacts with existing sulphides to form amino hydroxyl sulphates (through oxidation). Additionally, reduction, alternatives favour decreases in reduced sulphur compounds, while increasing generation of nitrogen compounds.

Initially, this increase in sulphate and nitrogen levels, and a corresponding decrease in sulphide levels, results in a change of pH caused largely by the decrease in hydronium ions. Each sulphate has fewer hydronium ions than a sulphide. The nitrogen produced in the reduction of nitrates has no hydronium ions and the products of the corresponding oxidation and subsequent reactions – including ammonia – are rich in hydroxide ions.

These ions bond with the released proteins and with the newly formed ammonium compounds as hydroxyl radicals, thus becoming “re-available” to repeat the reaction sequence. While the amino hydroxyl groups (the proteins bonded with hydroxyl radicals) are not strictly catalysts by definition, the end result is the same. The protein is not metabolised. The reaction is chemical rather than biochemical, and the protein is freed to continue reacting with additional sulphide groups or other oxidizable compounds.

It should be noted that the initial reactions must utilize dissolved oxygen from the dilute water or molecular oxygen from the atmosphere.

In addition to sulphides, other types of odours are impacted by **Rocket®Top**. Organic acids, ketones, and aldehydes may all be further oxidized by the hydroxyl radicals. Additionally, naturally occurring alcohols and bases from decomposition normally react with organic acids to yield various esters. These esterifications produce compounds such as ethyl, butyl and methyl acetate, common to decomposing wastes. Typically, **Rocket®Top** facilitates the conversion of these acetates back into acids and alcohols by hydrolysis. They are then subject to oxidation finally yielding carbon dioxide and water.

**Rocket®Top** also contains sarsasaponagen and other saponin glycosides. These compounds typically contain 27 or more atoms of carbon per molecule. They are highly reactive, and also act as a source



of hydrogen in biochemical reactions yielding carbon dioxide and water. While **Rocket®Top** contains no bacteria or other living agents, the saponin glycosides in conjunction with micro-nutrients essential for metabolic activity assist in the proliferation of bacteria.

Consequently, **Rocket®Top** creates both a chemical and biological filter by assisting microbial activity near the surface of the mass, and by creating the reactive chemical environment described above. **Rocket®Top** effectively filters a high percentage of the odorous gases before they can escape into the atmosphere. **Rocket®Top** also contains other powerful natural surfactants, allowing rapid and thorough penetration of its nutrients and reactants.

## **Application and Application Rates**

**Rocket®Top** may be applied directly to the surface of any odorous mass by spraying or misting with hand sprayers or pressure sprayers.

## **Uses**

**Rocket®Top** is currently in use with:

**Landfill Sites**

**Waste Water Treatment Plants**

**Compost Sites**

**Recycling Centres**

**Transfer Stations**

**Rendering Plants**

**Zoos**

**Waste Collection Systems**

**Rocket®Top** is also highly effective on liquid surfaces, and may be used to temporarily deodorize collection ponds, leachate ponds, lagoons, and holding tanks. **Rocket®Top** is applied in similar fashion and dosage on liquid surfaces as to solid surfaces.