

# Growth Technology

## HANDLING AGGRESSIVE LIQUIDS



### IMPORTANT INFORMATION

*Successful hydroponic cultivation involves the use of various aggressive liquid chemicals. Some of these liquids are very dangerous indeed and require very careful handling.*

#### ALWAYS READ THE LABEL

- 1. ALWAYS** keep all chemicals under lock and key and always OUT OF THE REACH OF CHILDREN.
- 2. ALWAYS** wear goggles, gloves and appropriate safety clothing when handling aggressive liquids.
- 3. ALWAYS** ensure that a good supply of fresh water is close to hand in case of accident.

**Growth Technology pH DOWN** contains orthophosphoric acid ( $H_3PO_4$ ) at 81%. The concentration is very strong so handle with care. This is a very dense liquid and should feel much heavier than water.

**Growth Technology pH UP** contains potassium hydroxide (KOH) at 25%. This is a very caustic liquid and should be handled with extreme care.



**NEVER mix pH UP and pH DOWN together. ALWAYS store separately.**

**Growth Technology LIQUID OXYGEN** contains hydrogen peroxide ( $H_2O_2$ ) at 11.9%. Hydrogen peroxide is a very unstable liquid and should be treated with great caution.

**Growth Technology LIQUID SILICON** contains potassium silicate at 6.1%. This is a very caustic liquid and should be handled with extreme care.

#### SAFETY DATA SHEETS

SDSs are available for all the aggressive products. Sheets can be requested by phone or by email, or accessed online at [www.growthtechnology.com](http://www.growthtechnology.com)

If you need more help or advice about the use of Growth Technology nutrients or pH chemicals then please do not hesitate to call us on 01823 325291, or email us at [techservices@growthtechnology.com](mailto:techservices@growthtechnology.com)



#### Personal protection

Use safety goggles, rubber or plastic gloves and protective clothing, and ensure adequate ventilation. Goggles are essential for eye safety when handling aggressive liquids.

#### First aid measures

**Eyes:** Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower lids. Get medical aid immediately. Do NOT allow victim to rub or keep eyes closed.

**Skin:** Get medical aid immediately. Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing and shoes. Discard contaminated clothing in a manner which limits further exposure.

**Ingestion:** Do NOT induce vomiting. If victim is conscious and alert, give 2–4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

**Inhalation:** Get medical aid immediately. Remove to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

*Note to physician: treat symptomatically and supportively.*

#### Dilution

**Growth Technology pH UP, pH DOWN and Liquid Silicon** are very concentrated solutions. This makes them extremely cost effective for the end user. However we **STRONGLY RECOMMEND** the grower to dilute the solutions before use.

- Diluting the solution renders it safer to handle.
- Diluting the solution makes it easier to use. More is required so dosing is less critical – less chance of mistakes.
- Dilute solutions are less likely to react with nutrient solutions. This is especially important with pH UP and Liquid Silicon.

ALL SAFETY PRECAUTIONS SHOULD STILL BE ADHERED TO.

Five litre plastic jerry cans are ideal for storing diluted pH control solutions. Always add water to the can first and then the solution. Mix them together thoroughly.

A 1 in 20 dilution (250 ml in 5 litres) is ideal – simply use the dilute solution at 20 times the rate of the concentrate. Exact measurements are not needed provided that a meter or test kit is used to measure pH.

**It is not recommended to dilute Liquid Oxygen.**

#### Measurement

The best way to measure and transfer liquids is with a pipette or syringe. Ask your retailer of Growth Technology products for a pipette. For larger amounts graduated plastic jugs and funnels are ideal.

[www.growthtechnology.com](http://www.growthtechnology.com)

*Designed by professionals... fine-tuned by experience*