

## Ethylene Glycol

- 1) Current U.S. formulations (Glyphosate) contain less than 2% EG.
- 2) New K<sup>+</sup> salt formulae at high loading may contain 120gm/l, or 12% EG.
- 3) Animal toxicology (LD-50 > 5000 mg/kg) is NOT likely to drive higher label classification.
- 4) EG is a significant human toxin:
  - Profound metabolic acidosis and renal failure.
  - Estimated lethal adult dose- 100 grams.
- 5) Treatment is aggressive and indicated for EG blood levels in excess of 20 mg/dl (= 200 mg/l).
  - Inhibit ADH with IV Ethanol or 4-MP
  - +/- Hemodialysis for levels in excess of 50 mg/dl

- 6) To achieve 200 mg/L in a 70 kg adult would require:

$$200 \text{ mg/L} \times 50 \text{ L (total body water)} = 10,000 \text{ mg or } 10 \text{ gm}$$

Equivalent to ingesting 82 CCs of product at 120 gm EG/L

- 7) To achieve the same level in a 20 kg (44 lb) toddler would require:

$$200 \text{ mg/L} \times 14 \text{ L (total body water)} = 2,800 \text{ mg or } 2.8 \text{ gm}$$

• **Equivalent to 24 ml of product at 120 gm EG/L.**

- Within the range achieved with a “mouthful” in a child.
- ANY evidence of ingestion would need to be conservatively treated as having taken in this quantity of EG.

## Consumer Product Safety Commission (CPSC)

- 1) Pesticides are EXEMPT from CPSC regulation.
- 2) Monsanto is NOT EXEMPT from activists making reference to CPSC!
- 3) CPSC has HIGH CONSUMER CREDIBILITY and THEY SAY.....

### TITLE 16--COMMERCIAL PRACTICES SAFETY COMMISSION PART 1500--HAZARDOUS SUBSTANCES AND ARTICLES; ADMINISTRATION AND ENFORCEMENT REGULATIONS—

Table of Contents Sec. 1500.4 Human experience with hazardous substances.

(a) **Reliable data on human experience with any substance should be taken into account** in determining whether an article is a "hazardous substance" within the meaning of the act. When such data give reliable results different from results with animal data, the human experience takes precedence.

(b) **Experience may show that an article is more or less toxic, irritant, or corrosive to man than to test animals.** It may show other factors that are important in determining the degree of hazard to humans represented by the substance. **For example, experience shows that radiator antifreeze is likely to be stored in the household or garage and likely to be ingested in significant quantities by some persons.** It also shows that a particular substance in liquid form is more likely to be ingested than the same substance in a paste or a solid and that an aerosol is more likely to get into the eyes and the nasal passages than a liquid.

1500.14 Products requiring special labeling under section 3(b) of the act.

(a) **Human experience, as reported in the scientific literature and to the Poison Control Centers and the National Clearing House for Poison Control Centers, and opinions of informed medical experts establish that the following substances are hazardous: ...**

(2) **Ethylene glycol and mixtures containing 10 percent or more by weight of ethylene glycol....**

(b)...(2) **Ethylene glycol. Because ethylene glycol and mixtures containing 10 percent or more by weight of ethylene glycol are commonly marketed, stored, and used in a manner increasing the possibility of accidental ingestion, such products shall be labeled with the signal word "warning" and the statement "Harmful or fatal if swallowed."**

## **POTENTIAL IMPACT**

- 1) 1999 CGPCC DATA: of 1737 Consumer Product cases, 662 are from concentrates. Assuming random distribution:

20% or **132 Cases in children 2-5**

Assume 50% have ingestion OR presumed ingestion  
(i.e.- cannot exclude ingestion of >24 cc).

(Note- 34% of total cases are via ingestion, more ingestion is expected in children, and cannot easily rule-out ingestion.)

## **60 CASES OF POTENTIALLY TOXIC INGESTION**

- 2) **Every one of these cases need to go to the E.R. for blood levels and evaluation.**

- **Many E.R.s CANNOT get blood levels.**
- **Many E.R.'s have LONG delays to get results.**
- **False Positive EG levels are a BIG problem.**
- **Uncertain cases MUST BE TREATED.**

- 3) **Every one of these cases is at least a MODERATE EFFECT case.**

### **Consumer Sector- Concentrate      Moderate or severe cases:**

<b>Ghost of Glyphosate Past... 1997 <u>AND</u> '98</b>		<b>9</b>
Ghost of Glyphosate Present...	1999	3
Ghost of Glyphosate Future??.	<b>2004??</b>	<b>60??</b>

## **SUGGESTION:**

**Limit Ethylene Glycol concentrations to  
LESS THAN 10 % by WEIGHT**

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- 1) Avoids inherent conflict with CPSC recommendations.**
- 2) Rate of severe oral toxicity will probably be similar to currently available glyphosate products.**

**(100 cc of concentrate may be fatal in an adult, 28 cc in a toddler)**

- 3) Business should be aware that:**

**EVEN AT 10% CONCENTRATION  
Some children will require hospital evaluation  
and treatment (mainly while awaiting lab results).**

- 4) This may impact PCC case severity scores and public perceptions of product toxicity.**
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## **DISCUSSION:**

**Should we differentiate consumer vs Ag products?**