



# CHILDREN & DAIRY CHEMICALS

## COMMONLY ASKED QUESTIONS

Chemicals used to clean dairy facilities and equipment, especially dairy pipeline cleaners, pose a special risk for children. Rapid medical assessment and treatment is critical in preventing long term health effects. Here are answers to some questions that will help you protect children that visit your dairy.

## WHAT DAIRY CHEMICALS ARE DANGEROUS FOR CHILDREN?

A dairy operation uses a variety of chemicals, both acid and alkali-based for cleaning of the barns, parlors, and equipment. Most of these preparations are highly concentrated – powerful cleaning agents formulated for industrial settings. Although any of these agents can cause injuries, the most dangerous are the alkali cleaners that are used to disinfect and clean residual milk out of pipelines.

## HOW DOES ALKALI CLEANER CAUSE INJURY?

The alkalis used in dairies are generally sodium hydroxide or potassium hydroxide-based and range in concentration from 8 – 25%. These products are many times more caustic than a common household alkali-based drain cleaner. These cleaners are so caustic that when they come into contact with skin or mucous membranes, they produce immediate chemical burns. Some children who have swallowed liquid pipeline cleaner have had burns severe enough to perforate their esophagus. Some have died from these ingestions; others have required repeated surgeries to repair scarred tissues. The long-term risk for developing esophageal cancer is greatly increased in these children. Even small amounts can cause extensive damage.

## HOW COMMON ARE INJURIES FROM PIPELINE CLEANING PRODUCTS?

There is no single source of statistics on alkali ingestion on farms. We can get some sense of the problem by looking at individual studies in selected areas. A South Dakota study found that fourteen children were seen in Sioux Falls area emergency rooms alone over a five-year period for caustic farm product ingestion. A study of four hospitals in Wisconsin over a ten-year period showed that ten children were admitted for dairy pipeline cleaner ingestion. These injuries are very severe, and since they are entirely preventable, even one injury is one too many.

## WHAT CAN BE DONE TO PREVENT THESE INJURIES?

Children should be separated from these chemicals at all times. One way to do this is simply to keep young children out of the milk house and/or chemical storage area. Lock chemical storage areas. An additional safeguard is to use a closed system so the chemicals are never in a container that can be accessed by children. Yet another prevention measure is to use packaging that is childproof. Some manufacturers have developed special transfer pumps and locking devices that are designed so that young children cannot open them.

Finally, many dairy operators simply are not aware of how dangerous these caustics are. Please share this information with others – but don't stop there. Awareness of the danger is not enough. Take one or more of the measures listed above and encourage others to do the same.

## HOW DO CHILDREN GAIN ACCESS TO THESE CHEMICALS?

Unlike caustic household products, which are packaged in accordance with the federal Poison Prevention Packaging Act, there are no childproof packaging requirements for these chemicals in agricultural or industrial settings. While children do not typically have access to industrial work areas, they can be present as family members or visitors in dairies.

For the cleaning products to be used, they must be transferred somehow to the equipment that needs to be cleaned. Some dairies use a closed system, where the cleaner is pumped directly into the pipeline. This is childproof and protects adult workers from spills and splashes as well.

However, in many dairies, the alkali is stored in large containers and is either poured or pumped into another small container, which is then carried to a point where it can be poured into the system. It is during this transfer process that young children, especially toddlers who want to touch and taste everything, gain access to the caustic. Tragically, some dairies use glasses, cups, squirt bottles, or other drinking containers for this transfer process, which makes the product even more attractive to the child.

## WHAT IF INGESTION OCCURS?

Inducing vomiting should be avoided. It is recommended to immediately call the regional Poison Center at **1-800-222-1222** to obtain information for first aid.

