General triazine) family of herbicides. the creation

Business, Management

General Information1. 1-Chloro-3-ethylamino-5-isopropylamino-2, 4, 6-triazine, is the scientific name for atrazine. (Pubchem. ncbi. nlm.

nih. gov, 2017)Ø There is no other names for Atrazine. There are to its scientific names and Atrazine2. This is what the substance's chemical structure looks like. 3. Chemical and Physical Properties Physical Description/Properties Atrazine is a white crystalline solid. Melting point 173-175C.

Sinks in water. A selective herbicide used for season-long weed control in a variety of crops. (Pubchem. ncbi. nlm. nih. gov, 2017) Molecular Weight (g/mol) 215.

68565 Solubility @ 20-25 degC (mg/L) 30 Vapor pressure @ 20-25 degC (mmHG) 3e-007 Diffusion coefficient in air (cm^2/s) 0. 056374608343 Diffusion coefficient in water (cm^2/s) 5. 5788225805e-006 (Old.

gsi-net. com, 2017)Manufacture and Purpose4. Atrazine is a member of the chlorophenoxy-trazine (or triazine) family of herbicides. The creation of the triazines began in the early 1950's by J. R. Glegy, Ltd.

In 1956 atrazine was registered for use in Switzerland then in 1958 for the US. Soon after this happening, it became the most popular out of the triazine family. This was because of its effectiveness against a wide spectrum of weed in a range of conditions.

Since atrazine has become one of the most widely researched herbicides to date. (Toxipedia. org, 2017)Ø Invented in 1958 in the Geigy laboratories atrazine was the second series of 1, 3, 5-triazine. (En. wikipedia. org, 2017)5.

Second most widely herbicide used in the United States, widely used on sugarcane, pasture grasses, and winter wheat. The herbicide atrazine kills broadleaf and grassy weeds. (Anon, 2017)6. Social and Economic Impact7.

It is very hard to be able to understand the importance that atrazine has to U. S. and global food supplies.

Critical to 8. It is impossible to understand the importance of atrazine to U. S. and global food supplies.

Atrazine is critical to weed control in production agriculture, playing a big role in the management of resistant weeds. (Atrazine. com, 2017)More about the benefits of Atrazine Ø Food Security (Atrazine. com, 2017)Ø Reduced Erosion (Atrazine. com, 2017)Ø Cost Efficient (Atrazine. com, 2017)Ø Cleaner Air (Atrazine. com, 2017)Ø Economic Development (Atrazine.

com, 2017)Food securityAtrazine has a huge hand in U. S. food production. Without the use of atrazine, farmers would have a huge drop in yields of their major crops. Major crops are corn, sorghum, and sugar cane.

This would increase costs to keep weeds at bay; this would cause a ripple effect throughout the agricultural and food production industries rippling all the way down to the consumer. Loosing atrazine would affect all the American farmers but ultimately affect the American food system. (Atrazine.

com, 2017)More food in less time with less land, less water and less energy (Atrazine. com, 2017)Reduced ErosionSoil erosion has been the main source

of water pollution in our streams and rivers. Using atrazine herbicides reduces soul erosion by up to 85 million tons per year.

That is enough to fill more than 3 million dump trucks. (Atrazine. com, 2017)Cost Efficient The U. S. consumers have benefited by up to $4. 8 billion due to the decreased producer costs, the increased yield and the reduced soil erosion.

The use of atrazine saves the U. S. consumers $3. 6-$4. 4 billion each year. (Atrazine.

com, 2017)Cleaner AirAtrazine allows U. S. farmers to grow more crops with less of everything: ü Less land, ü Less waterü Less laborü Less energyü Less carbon released into the atmosphere. · More land o The use of triazine herbicides reduces aggregate soil erosion by 56 to 85 million tons per year, enough to fill 3. 4 to 4 million dump trucks which, if parked end-to-end, would stretch about 13, 000 to 15, 000 miles, or more than halfway around the globe. (Atrazine. com, 2017)· Safe Streams Atrazine is the foundation of corn, sorghum, and sugar cane weed control systems, and yet atrazine concentrations in surface water have declined dramatically over the past 20 years. (Atrazine.

com, 2017) · Clean Air Through an increase in low-till and no-till farming, atrazine, and other non-triazine herbicides help reduce agricultural diesel fuel use ranges from 18 to 28 million gallons per year, including a 45 percent reduction for tillage in the Midwest. (Atrazine. com, 2017) Economic DevelopmentThe U. S. economy greatly benefits from all the trazine

herbicides by an estimated $4. 8 billion per due to the increased crop yields and reduced input costs. Atrazine’s value extends beyond farmers and the small businesses they support, to the tax base of rural communities, schools, teachers, sheriff deputies, and firefighters, in all, atrazine and the traizines account for up to 85, 000 American jobs. (Atrazine.

com, 2017)9. Environmental Impact10. Fish and amphibians are most vulnerable.

A growing body of research shows that atrazine exposure–even to trace levels of the herbicide–can adversely affect a number of species. A scientist recently did a study and found that 10% of male frogs reared in atrazine-laced water turned completely into females. Strikingly, the level of atrazine used in the study — 2. 5 ppb — is less than the EPA limit for drinking water contamination. (Panna.

org, 2017)11. What is the effect of atrazine on: Ø Air· After atrazine is entered into the air, it then is broken down by reaction with other chemicals that are in the air Sometimes atrazine is on different particles such as dust when this occurs breakdown is not expected to happen. The way Atrazine is removed from the air is when rainfall occurs.(Atsdr. cdc.

gov, 2017) Ø Water· This is the concentration of atrazine that the EPA considers safe to consume in drinking water over an average 70-year human life span.. (Mr.

Brian Oram, 2017)Ø Soil· Interaction of atrazine with soil microorganisms: population changes and accumulation. A loam soil treated with atrazine at

rates of 10, 30, and 100 microgram/g soil resulted in increased populations of actinomycetes, bacteria, and fungi over those in non-treated soil. (JL, 2017)Ø Living Organisms (Plants, Animals, Humans)· Changes in blood hormone levels in animals that than affected the ability to reproduce; Atrazine has shown to cause this. Atrazine can also cause liver, kidney and heat damage in animals: although not very common it is possible that atrazine could cause these effects in humans. (Atsdr. cdc.

gov, 2017)Addressing the Issues 12. If a health practitioner finds that, a person has been exposed to large amounts of atrazine, the practitioner should be should be asking the person if there are any children that could also have been exposed. The next thing that might be done is the health practitioner might need to contact the state health department to investigate, this is because Atrazine is a restricted-use pesticide. Atrazine is not a herbicide that can be purchased freely. There are ways to reduce your risk of exposure to atrazine, avoid areas where it is being used on the crops or to control the growth of weeds. If working with atrazine your can reduce your rise of exposure by reading any instructions that come with it, making sure you are reading labels and using the correct amount that it tells you to use.

Wear proper clothing and protective gear when working with atrazine. People working with atrazine should follow all instructions and any warning statements. (Ephtracking. cdc.

gov, 2017)13. 14. Many chemicals can be found in public and private drinking water supplies Atrazine is one of them. This could cause some

health problems if found in higher amounts than the health standard. There are four different ways you can become affected by atrazine they are by: Ø Breathing itØ Eating itØ Drinking it Ø Or skin contactAlthough the public may be exposed to atrazine found in water or air the general public has a better risk of being exposed through drinking well water (Ephtracking.

cdc. gov, 2017)EffectsThere are short-term and long-term affect when exposed to atrazine: The short term exposure effects are when you are exposed to atrazine at levels above the MCL (maximum contaminant levels) of 3 microgram per liter (µg/L) for relatively short periods of time. There are some of the health effects listed below of the short term effects of atrazine. (Ephtracking.

cdc. gov, 2017)· congestion of heart, lungs, and kidneys;· low blood pressure;· muscle spasms· weight loss; and· damage to adrenal glands. The long term exposure health effects from a lifetime exposure of atrazine at levels that higher than MCL of 3 micrograms per liter (µg/L). (Ephtracking. cdc. gov, 2017) The health effects to long term effects are listed blow:· weight loss;· cardiovascular damage;· retinal and some muscle degeneration; and· cancer.