

Going Green!

With Pressroom Chemistry

Making sense of going "green"

- Biodegradability
- VOC
- APE/NPE
- Toxicity footprints
- Environmental payback
- Best practices

Biodegradability



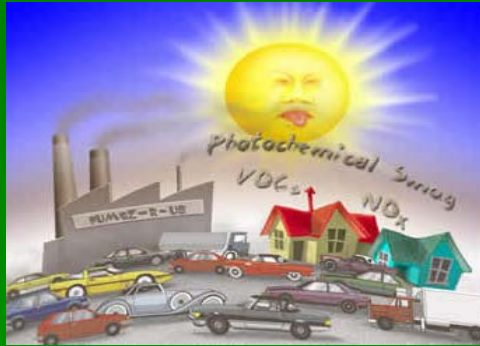
- Biodegradation is the process by which organic substances are broken down by photodegradation or by the enzymes produced by living organisms.

- Inorganics are generally not biodegradable and this includes things like common table salt and the minerals commonly found in drinking water
- We generally rate organic compounds as to their biodegradability properties, volatility and toxicity.
- Being “biodegradable” is not the end of a decision making process but rather the beginning.
- Some products are more biodegradable than others for example;

- Banana peel, 2 – 10 days
- Orange peels, 1 month
- Sugarcane Pulp Products, 1 - 2 months
- Cotton rags, 1 – 5 months
- Paper, 2 – 5 months
- Rope, 3 – 14 months
- Wool socks, 1 – 5 years
- Cigarette filters, 1 – 12 years
- Tetrapaks (plastic composite milk cartons), 5 years
- Plastic bags, 10 – 20 years
- Diapers 200 – 500 years
- Leather shoes, 25 – 40 years
- Nylon fabric, 30 – 40 years
- Tin cans 50 - 100 years
- Aluminum cans 200 - 500 years
- Plastic Bottles 70 - 450 years
- Plastic six-pack holder rings, 450 years
- XPS Foam cup, non-biodegradable
- Biodegradable Plastic Bags, 75 days
- Biodegradable Paper Cups, 75 days

Biodegradability of fountain solutions

- Surfactants are used in fountain solutions to replace alcohol substitutes
- Most surfactants today are biodegradable
- In this case biodegradability is based on 95% degradation within 21 days
- Inorganic compounds in fountain solutions are obviously not biodegradable



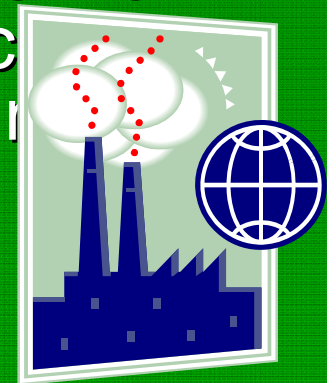
VOC



- **Volatile Organic Compounds**
- The EPA determined that some of the more volatile organic compounds we work with are contributors to smog because they can react with vehicle and combustion byproducts (most notably the NO_x or Nitrogen oxides) to create smog.
- They mandated testing of VOC levels and subsequently set levels for industry use.

- Based on the 24 categories of products that needed some form of control they developed a test called “method 24”.
- They set a limit of 30% VOC for fountain solutions that used to use Isopropyl alcohol or alcohol substitutes to clean plates and improve printing
- The limit for Blanket washes was set at 50% using a slightly different method called ACT because technology did not exist to clean blankets using 30% VOC solvents using method 24.

- Some Fountain Solutions still use alcohol substitutes and VOC can be an issue
- End users need to be aware that VOC content is expressed as a percentage and using two times the volume of product can dramatically affect your footprint
- There are a few Fountain Solutions that have zero VOC
- Blanket washes are considered to be the biggest source of organic volatile components.
- Currently there are a few blanket washes that use very low levels of VOC. Balancing effectiveness with “green objectives are insignificant issues.



- Consider reducing, reusing or recycling strategies



* This includes container recycling strategies

APE/NPE

- Alkyl Phenol Ethoxylates and Nonyl Phenol ethoxylates are a group of common surfactants that have been targeted and banned by European and Canadian governments as being linked to the production of Endocrine Disrupter Chemicals or EDCs
- The US government has not yet adopted this stance however consumer advocacy groups are strongly pushing for legislation

- EDC's are chemicals found to have the serious potential for affecting the well being of young children and pregnant women
- Walmart for example has a green policy of not selling any products containing APE/NPE
- Some fountain solutions and blanket washes contain APE/NPE compounds
- Contact your chemical suppliers to determine if the products you use contain APE/NPE components
- Make it a policy to reduce and or eliminate them.

Toxic footprints

- **Toxicity** is the degree to which a substance is able to damage an exposed organism and your toxic footprint is the irreversible damage that you do to your environment or your community.
- Since going green means more than biodegradability and VOC levels one should also consider hazardous or chemical toxicity
- On your MSDS check the first category under hazardous chemicals and check your label to become aware of any toxicity warnings.
- These components need to be managed.

- This includes disposal strategies, safe handling procedures and possibly replacement strategies
- If not handled properly these components can contribute to your environmental footprint
- Check the LD 50, STEL, TWA and fish toxicity information on the MSDS
- If you dispose of these components down the sewer there can also be financial implications.



FIG 1.A



WARNING

JUMPING INTO TOXIC WASTE
DOES NOT GIVE YOU
SUPER POWERS

MAY CAUSE ADVERSE
HEALTH EFFECTS - SEE FIG 1.A

FOR MORE INFORMATION CONTACT
ENVIRONMENTAL HEALTH SERVICES
ON 4727 9003 DURING BUSINESS HOURS
OR 4727 8999 AFTER HOURS



<http://go.funpic.hu>

Environmental payback

- This is how long it will take to pay back the investment you make in environmental improvement
- Not all initiatives are cost effective. Sometimes we do things because it is the right thing to do not because they make economic sense
- Innovative approaches are often necessary
- Invest in employee training and awareness
- Going Green does not always mean Greenbacks

Four of the best payback strategies

- Increase education and training
- Conduct environmental audits
- Publicize environmental efforts,
- Promote and communicate industry cooperative efforts i.e. share information about companies and processes that demonstrate environmental leadership

Best Practices

- Use foresight management process as a proactive option
- Empower employees to stimulate solutions
- Use a priority management process that utilizes cost effectiveness models
- Consider risk analysis that includes risk management, risk assessment and risk communications
- Make the entire process transparent and inclusive