

Pesticide Handling, Storage, and Disposal



Mark Matocha, PhD.
Texas A&M AgriLife Extension Service

What is the shelf life of pesticides?

- It depends.....
- Shelf life rapidly declines after opening
- Re-seal container



Are you storing DF or WDG?



Are you storing liquids?



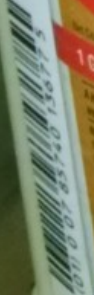
LOT NK22BXD442 PKG 44292
EPA EST. NO. 264-MJ-013



Capreno

Herbicide

NET CONTENTS: 1 GALLON



1 Gallon

A herbicide for control of annual broadleaf and grass weeds in corn.

Active Ingredients: Trifluralin (as salt) 4.0%
Glyphosate (as salt) 1.0%
EPA Reg. No. 264-MJ-013

EPA Reg. No. 264-1063

GROUP 2 & 27 HERBICIDE

**KEEP OUT OF REACH OF CHILDREN
CAUTION**

If used as directed, this herbicide is effective against a wide range of weeds in corn. It is a systemic herbicide and will kill weeds by interfering with their ability to produce food. It is not a contact herbicide and will not kill weeds by direct contact. It is not a selective herbicide and will kill all weeds in corn. It is not a pre-emergent herbicide and will not prevent weeds from germinating. It is not a post-emergent herbicide and will not kill weeds after they have emerged. It is not a residual herbicide and will not continue to kill weeds after it has been applied. It is not a systemic herbicide and will not kill weeds by interfering with their ability to produce food. It is not a contact herbicide and will not kill weeds by direct contact. It is not a selective herbicide and will kill all weeds in corn. It is not a pre-emergent herbicide and will not prevent weeds from germinating. It is not a post-emergent herbicide and will not kill weeds after they have emerged. It is not a residual herbicide and will not continue to kill weeds after it has been applied.

For MEDICAL USE Information Call 1-866-998-9989
For MEDICAL AND TRANSPORTATION (emergencies) ONLY
Call 24 Hours A Day 1-800-334-7577

1103196 0311
US7972470E



Two types of changes can occur

- Active ingredient changes chemically
- Formulation can break down and precipitate
 - Sludges, flakes, crystals
 - Some increase in acidity affecting container

RESTRICTED USE PESTICIDE

May Injure (Phytotoxic) Susceptible, Non-Target Plants. For retail sale to and use only by Certified Applicators or persons under their direct supervision and only for those uses covered by the Certified Applicator's certification. Commercial certified applicators must also ensure that all persons involved in these activities are informed of the precautionary statements.



Dow AgroSciences

Grazon^{*} P+D

Specialty Herbicide

*Trademark of Dow AgroSciences LLC

Specialty Herbicide

®Trademark of Dow AgroSciences LLC

For the control of broadleaf annual and perennial weeds, and certain woody plants and vines on CRP, rangeland and permanent grass pastures

Active Ingredients:

| | |
|--|--------|
| picloram: 4-amino-3,5,6-trichloro-2- pyridinecarboxylic acid triisopropanolamine salt | 10.2% |
| 2,4-D: (2,4-dichlorophenoxy) acetic acid, triisopropanolamine salt | 39.6% |
| Other Ingredients | 50.2% |
| Total | 100.0% |

Acid equivalents:

picloram: 4-amino-3,5,6-trichloro-2-pyridinecarboxylic acid - 5.7% -
0.54 lb/gal
(2,4-dichlorophenoxy) acetic acid - 21.2% - 2 lb/gal

EPA Reg. No. 62719-182

Personal Protective Equipment (PPE)

Some materials that are chemical-resistant to this product are barrier laminate, butyl rubber, nitrile rubber, neoprene rubber, polyvinyl chloride, or viton. If you want more options, follow the instructions for category C on an EPA chemical resistance category selections chart.

Pilots must wear:

Long-sleeved shirt and long pants, and
Shoes plus socks

All mixers, loaders, flaggers and other applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves,
- Goggles or face shield, and
- Chemical-resistant apron when mixing or loading, cleaning up spills or equipment, or otherwise exposed to the concentrate

See Engineering Controls for additional requirements.

Follow manufacturer's instructions for cleaning/maintaining PPE.
If no such instructions for washables exist, use detergent and hot water.
Keep and wash PPE separately from other laundry.

Inert Ingredients

- Improve activity
- Ease of application
- Assist dilution
- Product stability

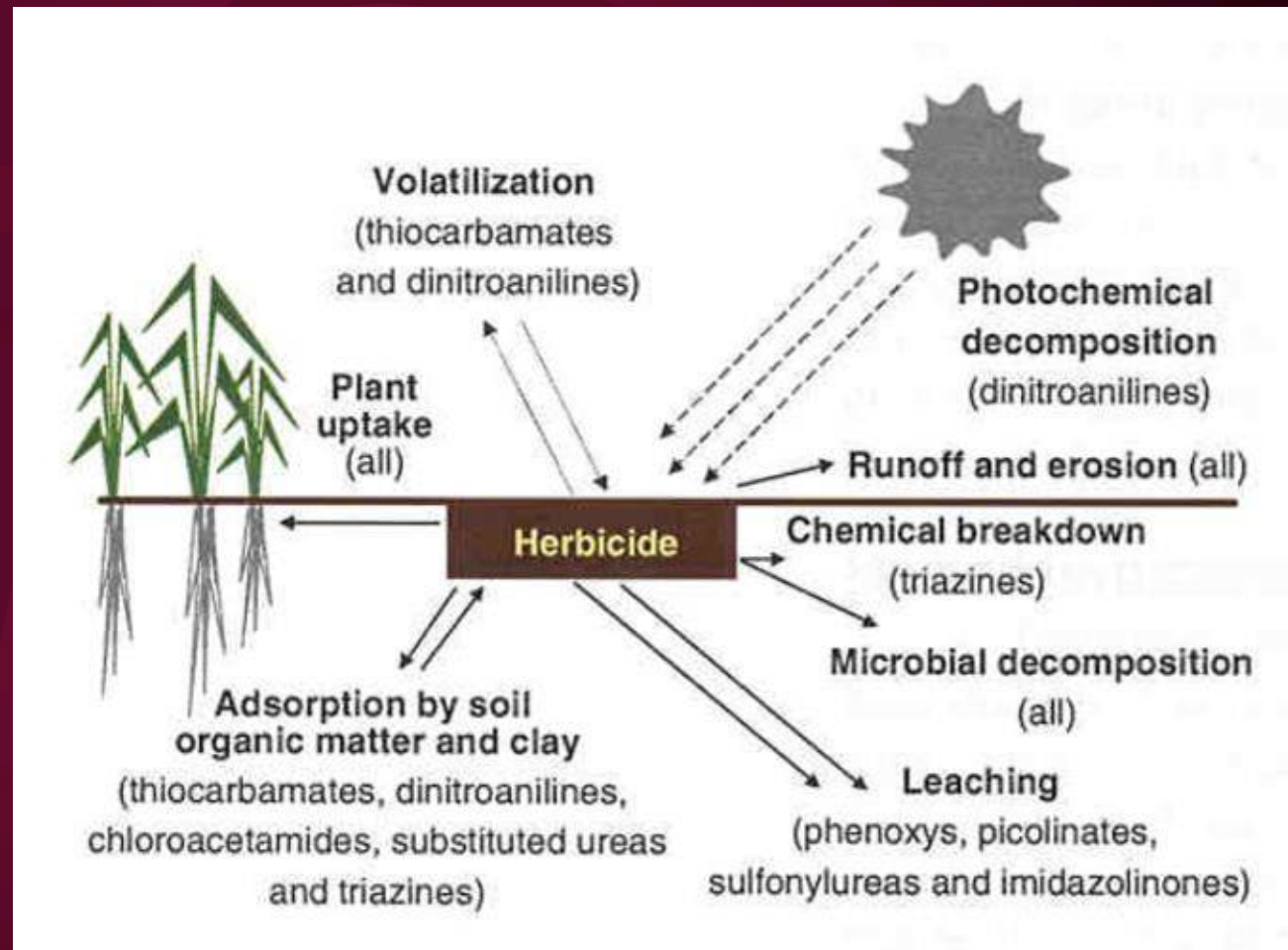
Separate Volatile Chemicals

- Highly volatile pesticides can contaminate other products when stored in close proximity



Environmental conditions

- Temperature
- Moisture
- Sunlight



Signs of Trouble

- Sedimentation
- Gelling
- Discoloration



Formulation

- Oil sprays
- EC
- WP
- Dusts and granules

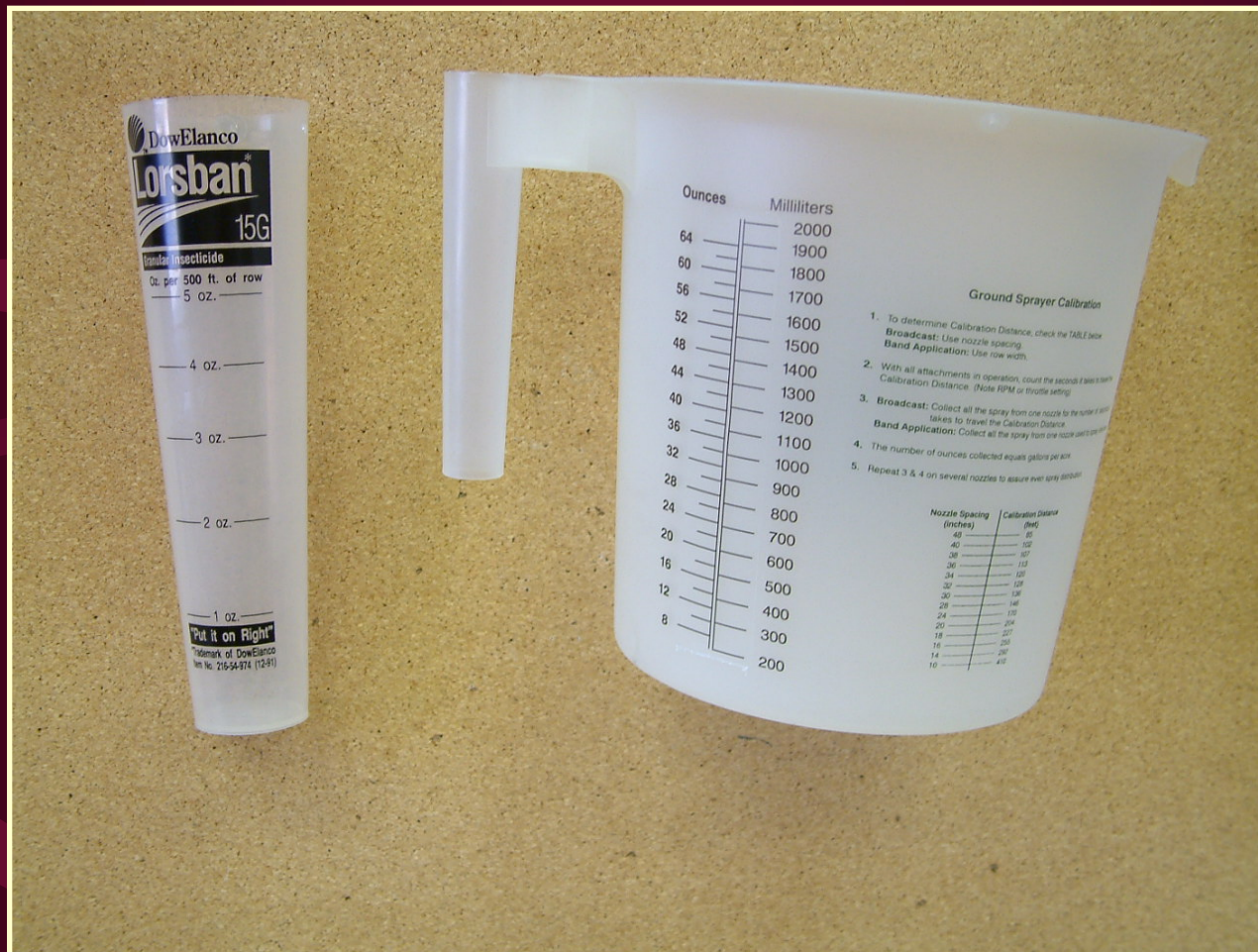
Signs of breakdown

- Sludge, solution separates
- Adding water does not produce milky solution
- Lumping, powder will not mix with water
- Excessive lumping

How Long?

- Typically 2 years – unless otherwise stated
- Outdated stocks can be used if they haven't broken down

Dry Ounce -vs- Fluid Ounce



Fluid Ounce

Measure of Volume (Space Occupied)

1 fluid ounce = 2 tablespoons
= ~ 30 cc's (= 29.6 cm^3)
= ~ 30 mL (= 29.6 mL)
= 1/128 of a US Gallon
= 1/16 of a US Pint



Dry or Liquid?



4-Ounces Dry Weight



4 Fluid ounces vs. 4-Ounces Dry Weight



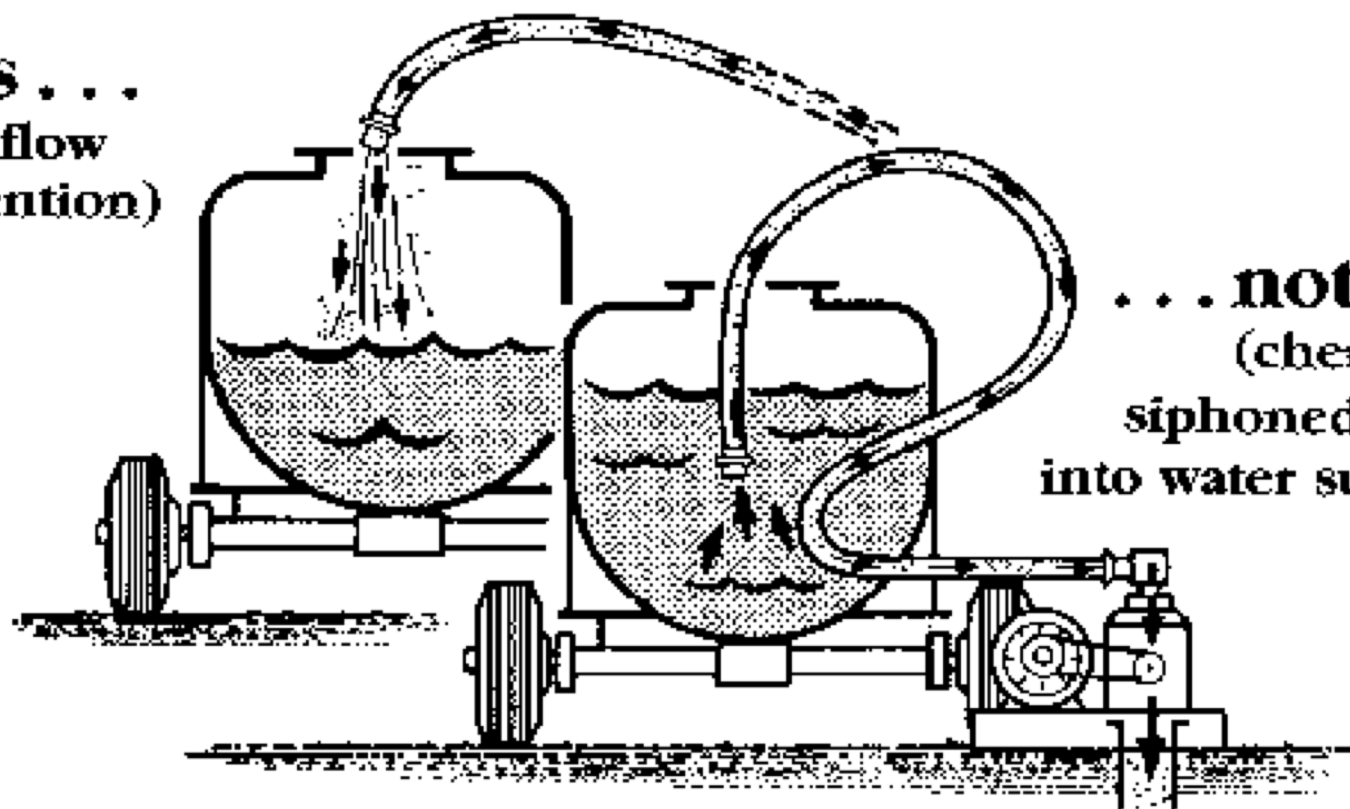
Dry Ounce

- Note the placement of the 1 dry-ounce (weight measure) mark:

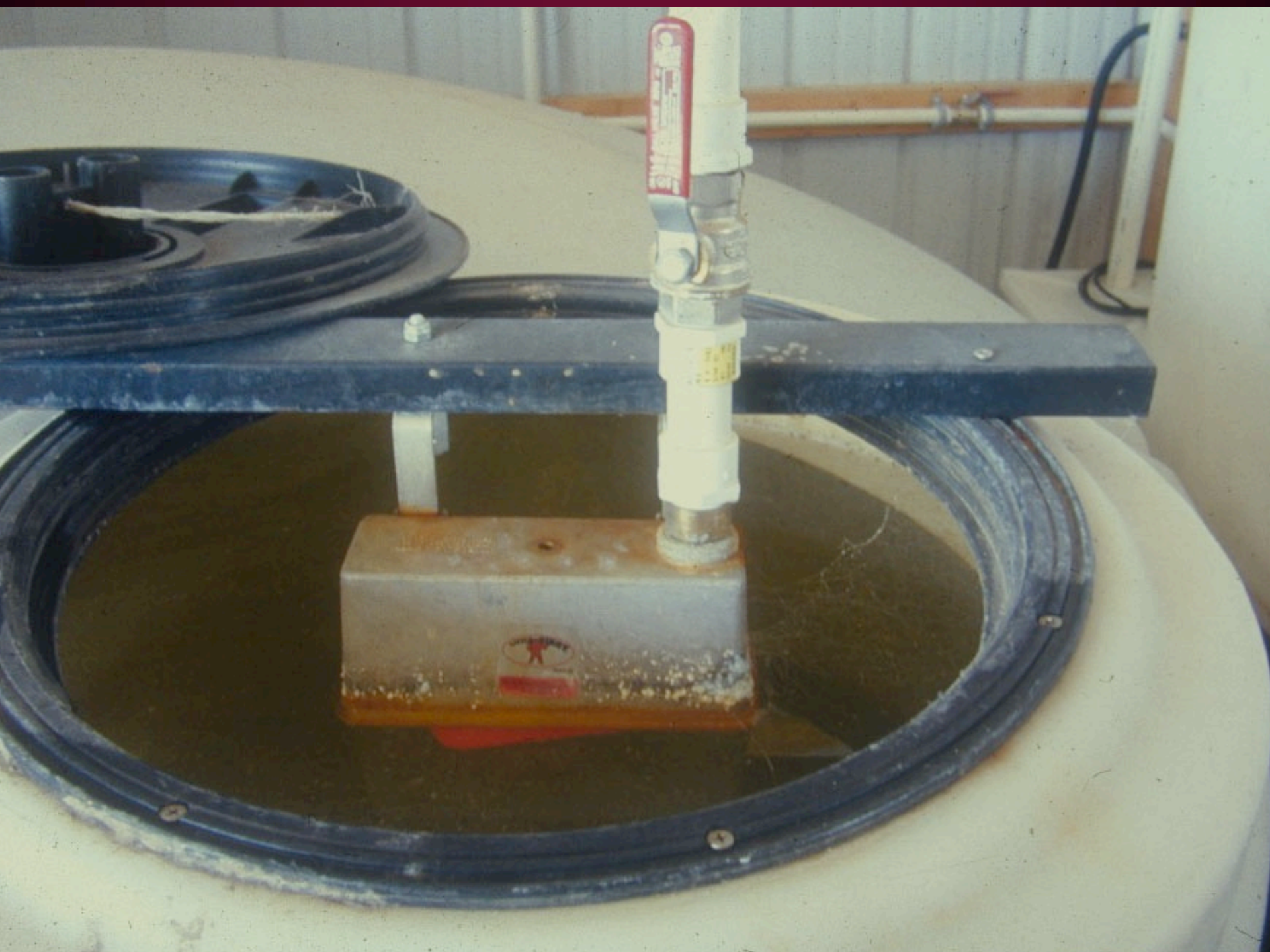




This . . .
(backflow
prevention)



. . . not this
(chemicals
siphoned back
into water supply)





sod, or for commercial seed production, or for research purposes.

Storage and Disposal

Do not contaminate water, food or feed by storage or disposal.

Storage: Store above 28°F or agitate before use.

Pesticide Disposal: Pesticide wastes are toxic. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your state pesticide or environmental control agency, or the hazardous waste representative at the nearest EPA regional office for guidance.

Container Disposal (Plastic): Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities. Plastic containers, after triple rinsing, may be incinerated if allowed by state and local authorities. If burned, stay out of smoke.

Container Disposal (Metal): **Do not reuse container.** Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

General: Consult federal, state, or local disposal authorities for approved alternative procedures.

Does this look like good pesticide storage?







Minibulk >30 days;
not contained

Containers not
disposed of
according to label
instructions

Unrinsed
containers

No RUP records

No label, partially
filled with unknown
product

Soil contamination from
spills not cleaned up





Triple Rinse.....Then What?



Know the Law!







Free Service Specializing in Recycling Plastic Agricultural Containers

1(800) 654 3145

info@usagrecycling.com

HOME

RECYCLABLE CONTAINERS

CONTACT US

REQUEST SERVICE

STATE CONTACTS

GRANULATION SCHEDULE



Rinse, Recycle, Do Your Part!



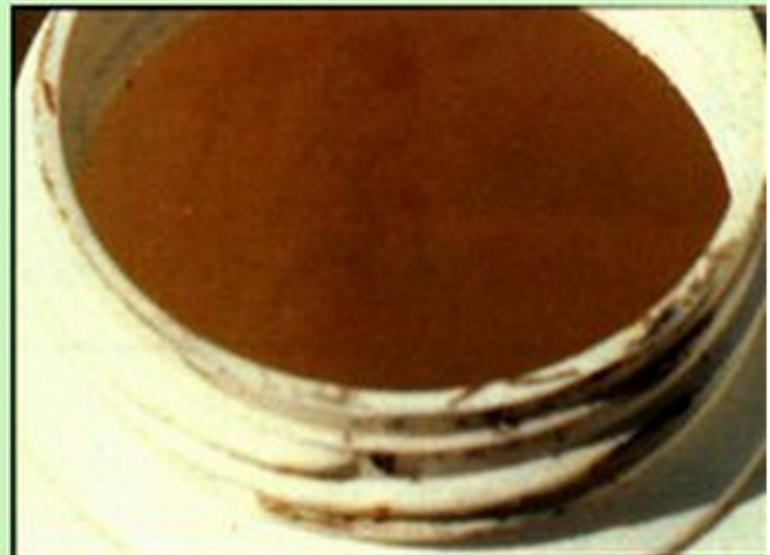


Acceptable



Thread and lip are clean.

Unacceptable



Dried formulation on thread and lip.



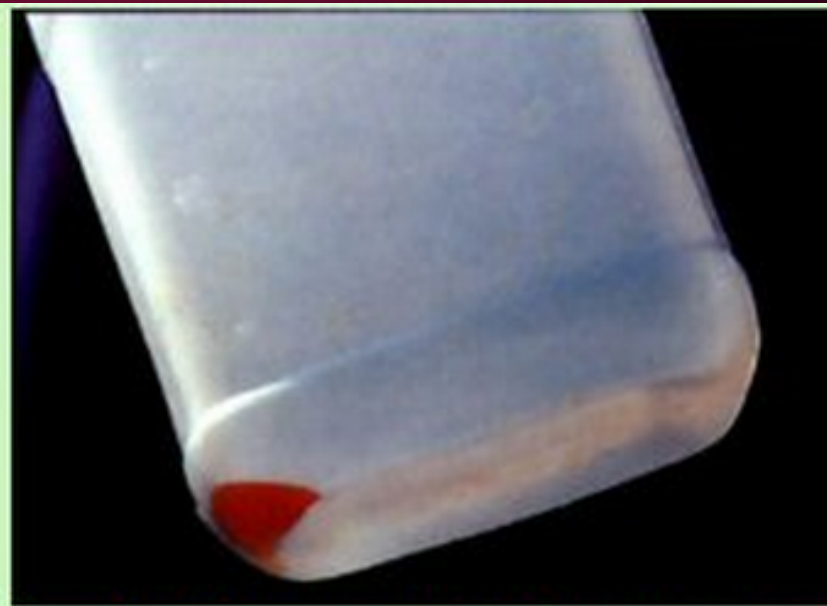
Stained but acceptable.



Stained and unacceptable.



Inside of container is dry.



Liquid is present inside container.



Inside of bottom is rinsed clean.



Bottom is caked with formulation.





7.30 Classification of Pesticides

Prohibited Pesticides

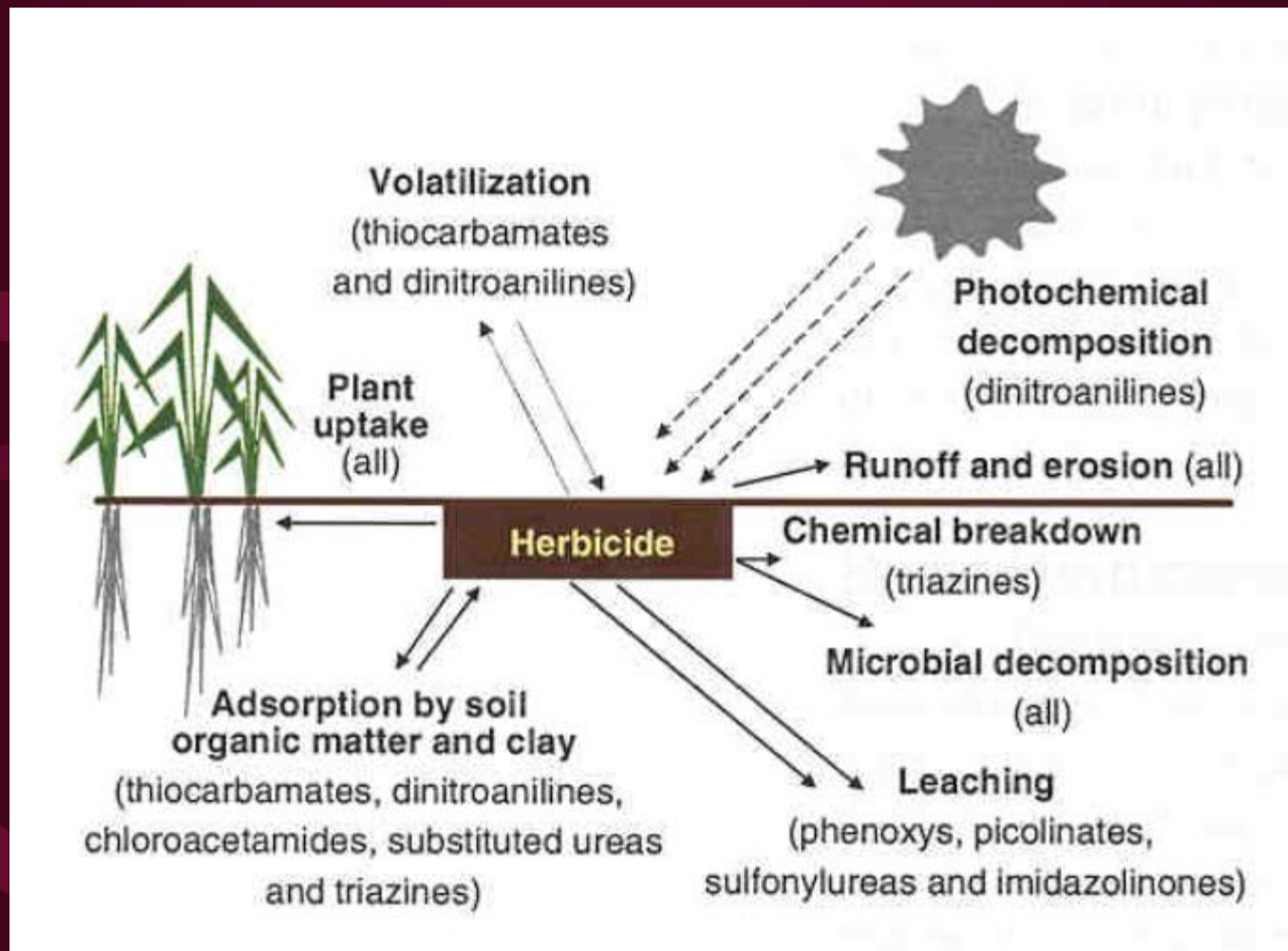
- Aldrin
- Chlordane
- DDT
- DDD
- Dieldrin
- hexachlorobenzene
- All mercury-based
- Mirex
- Toxaphene
- Heptachlor
- 2,4,5-T
- 2,4,5-TP (silvex)

Prohibited Pesticides

- No person shall use a prohibited pesticide for any purpose
- A person in possession shall by proper storage, care, handling, and transport prevent the release of the prohibited pesticide into the environment and prevent exposure...and shall dispose of in accordance with all state and federal law



Fate of Pesticides in the Environment



Houston company accused of dumping chemicals down storm drain





[Home](#) / [Water Quality](#) / [Assessment](#) / [2016 Integrated Report](#) / [Draft 2016 Texas Integrated Report for the Clean Water Act Sections 305\(b\) and 303\(d\)](#)

>> [Questions or Comments:](#)
303d@tceq.texas.gov

Draft 2016 Texas Integrated Report for the Clean Water Act Sections 305(b) and 303(d)

This report includes information about the quality of Texas' surface waters as reported in 2016

The Texas Integrated Report describes the status of the state's waters, as required by Sections 305(b) and 303(d) of the federal Clean Water Act. It summarizes the condition of the state's surface waters, including concerns for public health, fitness for use by aquatic species and other wildlife, and specific pollutants and their possible sources.

The Commission adopted the Draft 2016 Texas 303(d) List on October 17, 2018.

- [Cleanups, Remediation](#)
- [Emergency Response](#)



Texas HB 572 would have re-started a pesticide collection program for Texas.







TCEQ GENERAL INFORMATION

Waste Permits Division

GI-225 • Revised July 2014

Commercial Management Facilities for Hazardous and Industrial Solid Wastes

This publication lists facilities that have permits or authorizations from the Texas Commission on Environmental Quality (TCEQ) to manage industrial hazardous waste, industrial nonhazardous waste, or both. As you use this list, please note the following conditions:

- As the originator of the waste, you will be responsible for determining which facility best suits your purpose.
- The conditions of each facility's permit restrict the type of waste that the facility may accept. These restrictions might prohibit a particular facility from accepting your waste.
- The TCEQ does not recommend or refer customers to specific businesses.
- This list offers no information about whether a specific facility is complying with the conditions of its permit. You can find general information about a facility's compliance history on the TCEQ website, <www.tceq.texas.gov> (search for "Compliance Histories").

Commercial Management Facilities for Hazardous and Industrial Solid Wastes in Texas

Region 4 – Dallas/Fort Worth (continued)

Dallas County (continued)

| Company Name and Address | Waste Accepted; Type of Facility | Industrial Solid Waste Registration Number and EPA ID Number | Permit Number(s) |
|--|---|--|------------------|
| PSC Recovery Systems, LLC 2131 Progress Drive Dallas, TX 75212 (214) 637-5575 < www.pscnow.com > | Industrial and Characteristically Hazardous Wastewaters, Used Oil, MSW Generated Wastewaters | ISW Reg. No. 40759 EPA ID: TXD102599339 | 1421 40759 |
| Safety-Kleen Systems, Inc. 2130 East Grauwyler Rd. Irving, TX 75061 (972) 438-4080 < www.safety-kleen.com > | Hazardous Waste and Nonhazardous Class 1, 2 and 3 Industrial Solid Waste, Solvent Recycling, Used Oil, Processing, Storage and Transfer | ISW Reg. No. 55194 EPA ID: TXD981052061 | 50218 |
| Stericycle Specialty Waste Solutions, Inc. 8801 Governors Row Dallas, TX 75247 (877) 927-8311 < www.stericycle.com > | Nonhazardous Class 1 and Class 2 Industrial Solid Waste, Storage and Processing | ISW Reg. No. 87902 EPA ID: TXR000069344 | 87902 |

Denton County