



University of Nevada
Cooperative Extension

Special Publication-01-09
(Updated 2012)

Safe and Legal Transportation of Pesticides



Wayne S. Johnson, Horticultural Specialist, University of Nevada Cooperative Extension
Charles Moses, Environmental Scientist IV, Nevada Department of Agriculture

Pesticide Hazards

Nevada's farmers, ranchers, other pesticide applicators and pesticide distributors use and transport a variety of pesticides. Many have received applicator training and are aware of the general hazards of these agricultural chemicals. Potential hazards exist when pesticides and other chemicals are transported, even in small amounts. Consider these associated risks:

1. The flammable or explosive potential of pesticides, their solvent carriers and containers.
2. The toxic properties of the smoke, fumes, vapors, dusts, and liquids, and the potential exposure of pesticides to the driver, co-workers in the vehicle and persons outside the vehicle in the event of an accident.
3. The corrosive nature of many pesticides or their waste by-products after burning.
4. The possible aftereffects from an accidental spilling or dispersing of these biologically active chemicals onto vegetation, yards and streets, or into sewers, ponds, rivers or other waters.

The active ingredients of pesticides are toxic, especially in their concentrated form. Most are not flammable, but the solvents used in their formulation are. Liquid pesticide emulsions or oil solutions (xylene, kerosene, or other organic solvents) present great fire hazards and should be transported as toxic, flammable liquids. Many liquid pesticides are stored in glass containers or metal cans or drums. These, and aerosols, present a hazard; they may explode, especially during the sparks and impacts of an accident. Plastic, paper and cardboard containers may burst upon impact, or melt or burn. Their contents may poison occupants of a vehicle or fuel a fire.

The smoke, fumes, vapors, dusts and liquids produced by pesticides during an accident or fire are toxic. Some are extremely toxic. Those who offer first aid or emergency response should be aware when an accident involves pesticides and use caution to avoid

exposure to the pesticides, or they may become victims. No one should try to extinguish such a fire without proper protective clothing and a self-contained breathing apparatus. All persons in the area of an accident and/or fire should be kept clear and upwind from the site. Any inhabited buildings downwind from a fire should be evacuated. Livestock, pets and other animals should be removed as well.

Chemically contaminated runoff water from a fire site can be toxic to plants, animals and microorganisms. It can also be destructive to wastewater treatment operations, contaminate surface waters and pollute groundwater, drinking water and irrigation supplies. Such runoff can leave toxic residues in soils and sediments that can persist for years. If there is runoff from an accident or fire, it must be contained and recovered when possible.

Uncontaminated ammonium nitrate fertilizer (NH_4NO_3) is not a fire hazard when properly shipped. However, when contaminated by some pesticides or other products containing fats, oils, acids, finely divided metals or sulfur, it becomes highly flammable and explosive. Large amounts of oxygen are given off when this fertilizer burns, increasing the fire's intensity. While ammonium nitrate fertilizer should never be shipped with pesticides, emergency personnel and firefighters should be ready to deal with its presence.

Emergency Assistance

The Chemical Transportation Emergency Center (CHEMTREC) provides emergency information on chemicals and procedures for spills, fires, leaks or exposures involving chemicals. CHEMTREC is a voluntary program operated by member companies. Assistance is available 24 hours a day, 7 days a week. Their nationwide emergency telephone number is (800) 424-9300. This number should be posted or available in all vehicles transporting chemicals, and the driver of a pesticide carrier should keep it in his or her wallet.

Immediate Accident and Fire Response

If an accident occurs or a fire starts and cannot be safely extinguished within a few seconds:

1. Call emergency services or the fire department, give the location of the fire and explain that pesticides are involved.
2. Call a nearby hospital so they can be prepared to treat the injured for pesticide exposure. Take a list of the pesticides involved in the accident (a copy of the shipping document) to the hospital with the injured.
3. When possible, start first aid but avoid contact with the pesticides. Wear gloves to remove victims to a pesticide-free area. Remove pesticide contaminated clothing immediately and warn others of the danger.
4. Do not try to extinguish the fire without adequate protective clothing and respiratory protection.
5. Keep all people upwind of the accident. If there is a fire, evacuate nearby buildings.
6. Avoid breathing smoke, fumes, vapors or dusts.
7. At a minimum, wear rubber boots and gloves.
8. Avoid using large amounts of water to extinguish a fire to minimize toxic runoff.
9. Control runoff with dikes. Block routes to sewer lines and storm runoff inlets so the runoff can be recovered and environmental contamination kept to a minimum.
10. Cover powdered pesticides to prevent toxic dust movement by winds or passing vehicles.

Procedures to Follow After an Accident

To protect yourself, follow these personal precautions. Encourage others to do the same.

1. Wash and shower using large amounts of soap and water to remove all toxic chemicals. Pay special attention to the scalp, fingernails, all skin folds, creases and openings such as ears, nose,

eyes, etc.

2. Wash all personal clothing, protective clothing, and respirators. Discard contaminated leather and/or canvas shoes, boots and gloves. If worn again, they may expose the wearer to pesticides, causing skin problems, other toxicity symptoms and even death, depending upon the chemicals involved.
3. Be on the lookout for early symptoms of pesticide poisoning, such as headache, dizziness, nausea, sweating or blurred vision. These symptoms may show up immediately or only after several hours.

Cleaning Up

Properly clean up after a pesticide-related accident. Dispose of all debris and damaged pesticides following these procedures:

1. Close off the area, post a guard, if necessary, and control all access to the site.
2. Pump standing runoff water into tankers and dispose of it properly as a hazardous waste.
3. Use the following procedures to remove debris and waste chemicals:
 - a. Instruct people involved in the cleanup of the area and its toxic, hazardous debris. Insist that they wear **full** personal protective clothing and equipment to remove and dispose of all wastes.
 - b. Use mechanized loaders and dump trucks to minimize human contact with contaminated materials. Use hand tools to avoid direct contact with the contaminated materials.
 - c. Avoid raising dust. It may be necessary to lightly mist the area to keep dust down. Wetting the debris may not be possible depending upon the nature of the chemicals involved and their solubility. Check chemical properties prior to misting.
 - d. Transfer pesticides from broken or leaking

containers to disposal drums and identify their contents, if possible.

- e. Do not wash any material into a waterway, a sewer system, a storm drainage system or the ground.
- f. Carry debris to an approved disposal site in tight, metal-bodied dump trucks or containers. Cover the load with a disposable cover so contaminated dust does not escape. Avoid overloading the containers and the truck to prevent spills. Secure all containers within the truck to avoid their movement during shipping. This waste may be classified “hazardous” and specific procedural requirements may apply.
- g. Decontaminate tools, vehicles, etc. with a solution consisting of 1 quart sodium hypochlorite (household chlorine bleach) plus 1 cup of detergent in 2 gallons of water. Scrub thoroughly and rinse with clean water. Dispose of the rinse water properly as a hazardous waste.
- h. Inspect the surrounding areas for possible contamination.

Incident/Accident Reports

In the case of an accident, the carrier is responsible for completing an incident/accident report. This report should include the following information:

- Company’s name
- Employee’s name and job title
- Supervisor’s name
- Date, time and location of accident
- If on private property, landowner’s name
- Task being performed when accident occurred
- Date and time accident reported to supervisor
- Names of witnesses
- Injuries and fatalities resulting from accident
- Property damage resulting from accident
- First aid given, medical treatment required
- Workdays lost

Hazardous Waste

Damaged pesticides are considered hazardous wastes. The Nevada Department of Conservation and Natural Resources, Division of Environmental Protection regulates the disposal of hazardous wastes in Nevada. The owner of damaged pesticides, debris and contaminated wastewater is responsible for their proper disposal and must comply with state laws regarding disposal of hazardous wastes. State law requires that a third party, an environmental manager certified by the State of Nevada, conduct the clean up and waste disposal. The Division can also provide guidance in the proper removal and cleanup of contaminated debris, equipment and soils. Accordingly, the owner should secure approval from the Division of Environmental Protection, 775-687-4670, prior to cleanup and disposal.

Transportation of Pesticides

The Transportation Safety Act of 1974 authorized the U.S. Department of Transportation (DOT) to declare, issue and enforce hazardous materials regulations for all modes of transportation. These regulations, contained in Title 49 of the Code of Federal Regulations (CFR), cover safety aspects of transporting hazardous materials, including the packing, repacking, handling, describing, labeling, marking, placarding and routing of such materials.

Certain hazardous materials transported in small quantities as part of business are known as “materials of trade” (MOT) and are subject to less regulation because of their reduced hazard. MOT’s are hazardous materials that are carried by motor vehicles to directly support a principal business such as lawn care and pest control. The rules that apply to MOT’s are found in 49 CFR part 173.6 and require operators to have a general knowledge of MOT regulations, the quantity limitations that apply, and packaging, marking and labeling requirements.

In addition to this, registration is required by the Nevada Department of Motor Vehicles if you

transport:

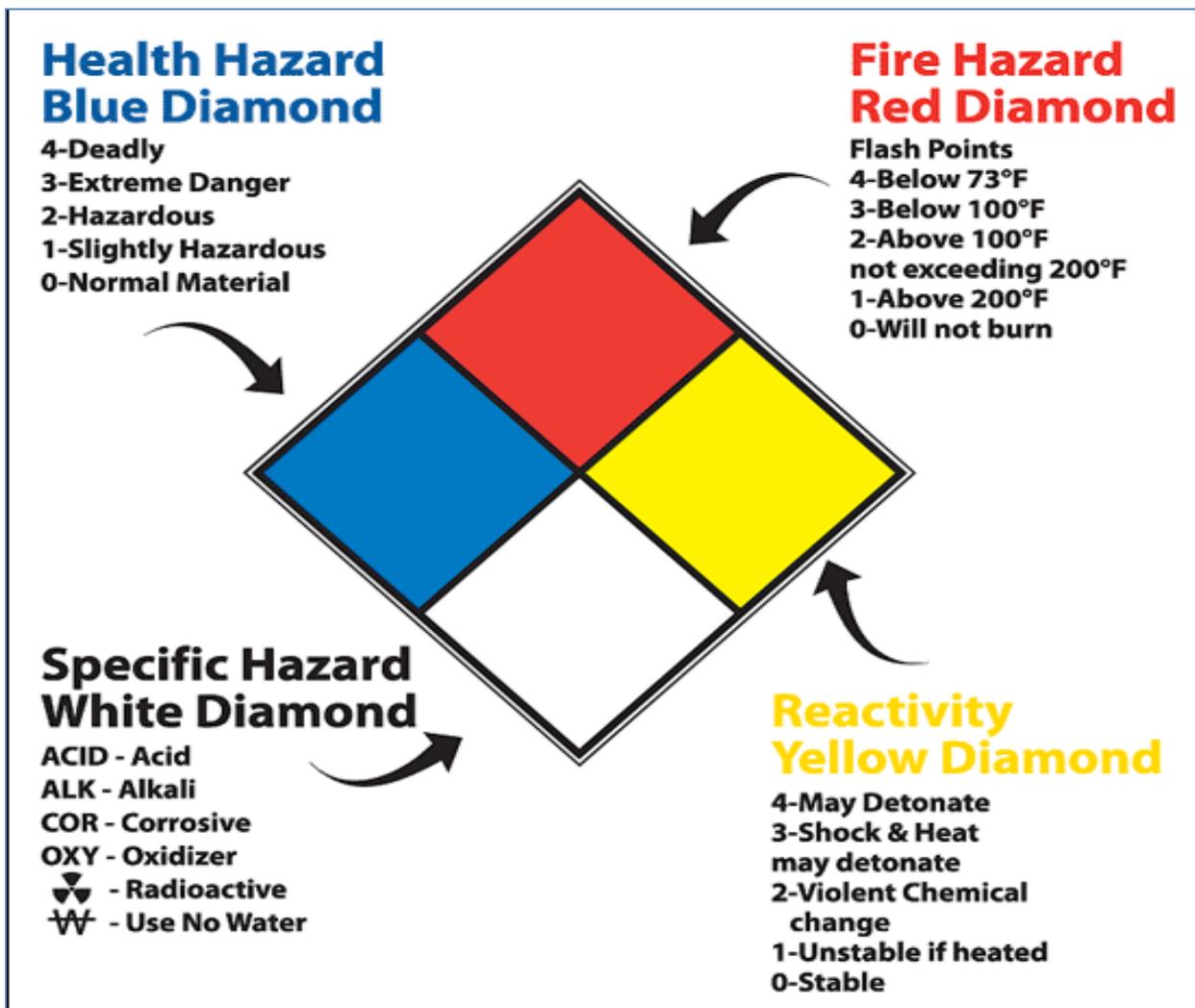
- a) any hazardous materials (or hazardous waste) that requires placarding or,
- b) more than one liter of a “material extremely toxic by inhalation.”

Hazardous material training is required as well. If you are a farmer or rancher who transports hazardous materials in direct support of your farming activities, you are exempt from the registration and training requirements.

If you are not a farmer or rancher, transportation of a few pesticide products considered to be “material extremely toxic by inhalation” is exempted from registration through a special permit authorization.

For example, transportation of small quantities of aluminum or magnesium phosphide is exempt from registration requirements through a special permit authorization, DOT-SP 13307. A copy of this authorization can be found at http://hazmat.dot.gov/sp_app/special_permits/spec_per_index.htm.

When engaged in commerce and transportation of hazardous materials, all “for hire” carriers and all “private” carriers are subject to DOT hazardous material regulations. The following checklist is only a guide to aid carriers of hazardous materials in complying with DOT regulations. It does not contain or refer to all DOT requirements for transporting hazardous materials. It is your responsibility to become familiar with these rules.



Commercial Carriers

1. **Determine employee qualifications:** Carriers are required to make certain that employees who have any responsibility for receiving, processing or transporting hazardous materials are thoroughly instructed in all aspects of the regulations that apply to their job function.
2. **Determine transport vehicle condition:** Make certain the cargo space or truck bed is suitable for loading and holding hazardous materials. The area should be free of nails, sharp objects and unrelated junk. Overall vehicle condition must be determined safe for all possible situations or emergencies.
3. **Carry emergency response materials:** At a minimum, carry a shovel and enough material (cat litter, absorbent chemical pillows, dirt, etc.) to contain the quantity of pesticide being transported.
4. **Determine suitability of shipment for transport:** Check shipping papers for accuracy and completeness. Papers should include the product and chemical name, its ID number, hazard class, the quantity being transported and the name and address of consignee or cosigner. Obtain a proper shipper's certificate, unless exempted. Make sure the proper placard(s) and ID number(s) are displayed, when required. Check that each package is properly marked and labeled, and that they are in the proper condition to be transported. Check that the freight is adequately blocked, braced and tied down to prevent movement and/or damage in transit.
5. **Incident and accident reports:** The carrier transporting hazardous materials is responsible for incident/accident reports. Most incidents or accidents involving unintentional releases of hazardous materials during transport must be reported to the Nevada Highway Patrol (Elko, 775-735-1111; Las Vegas, 702-486-4100; Reno, 775-688-2500; Carson City, 775-687-5300) and the United States Department of Transportation

(DOT), 800-424-8802. A written report may be required. Your county and city may also require reports.

Certified Private, Certified Commercial and Licensed Pesticide Applicators

Some exceptions to these regulations are provided for agricultural and licensed applicator operations. For example, a commercial pest control operator can transport a diluted mixture of chlorpyrifos not exceeding 2% concentration in a tank having a capacity of up to 400 gallons and be exempt from the hazardous materials regulation (HMR). Check with your supplier, DOT or NDOT for exact procedures and regulations with regard to handling and shipping specific pesticides. Also, the state of Nevada adapted the Universal Waste Rule relaxing EPA regulations for the disposal of waste pesticides. Universal waste rules allow pesticide users to store and transport most waste products (except those that are poisonous by inhalation) to a collection event that is sponsored by Nevada Department of Agriculture. Universal waste does not require a hazardous waste manifest; therefore, it is not considered hazardous waste under DOT regulations (40 CFR Ch. 1 part 273.52).

In general, certified and licensed applicators, their workers and others transporting small quantities of pesticides should follow the precautions outlined for commercial carriers. Pesticides are toxic, may be flammable, and in an accident—even a simple spill or rupture—they pose a threat to those using the vehicle carrying the pesticide. This includes risks to the environment and to those who may use the vehicle in the future unless it is properly washed. Do the following to reduce the risks associated with transporting pesticides:

1. Make sure everyone involved is knowledgeable about the dangers of transporting pesticides.
2. Ensure the vehicle is safe, well maintained, and that the pesticides are securely contained—containers closed and strapped down—and not exposed to sharp objects. Pesticides must not be carried in the cab or occupants' compartment, especially liquid and dusty formulations.

3. Discuss appropriate emergency responses to avoid and manage spills, leaks, accidents and fires associated with transporting pesticides.
4. Carry emergency response equipment, including a fire extinguisher, a shovel, absorbent material (cat litter, chemical pillow, dirt), rubber boots, gloves and a cell phone with a listing of emergency numbers saved on the phone.
5. Shipping document (see example next page). Make a list of each pesticide to be transported, including common name, chemical/trade name, proper shipping name, packing group number, hazard class, container size, amount carried, EPA Registration Number, and reportable quantity, if any. Date the paper and carry it in plain sight in the vehicle within reach of the driver. If there is an accident or fire, this information is invaluable to police and emergency personnel.

keep this contact information in your vehicle, and save the relevant phone numbers in your cell phone. The following page contains an example of a shipping document form to aid you in your recordkeeping requirements.

Further information may be obtained from:

Nevada Department of Agriculture,
<http://agri.state.nv.us/>

Nevada Department of Public Safety, Nevada Highway Patrol, <http://nhp.nv.gov/>

Pesticide Safety Education, University of Nevada Cooperative Extension,
www.nevadapesticideeducation.info

State of Nevada, <http://nv.gov/>

University of Nevada Cooperative Extension,
www.unce.unr.edu

Below is an emergency contact information sheet to which you can add personal information. You should

EMERGENCY CONTACT INFORMATION

Company Emergency Contact Number: _____

Company Physician: _____

Personal Physician: _____

Hospital: _____

Poison Control: 1-800-222-1222

CHEMTREC (Chemical Transportation Emergency Center): 1-800-424-9300

Nevada Highway Patrol:

Carson City: 775-687-5300

Las Vegas: 702-486-4100

Elko: 775-753-1111

Reno: 775-688-2500

The University of Nevada, Reno is an Equal Opportunity/Affirmative Action employer and does not discriminate on the basis of race, color, religion, sex, age, creed, national origin, veteran status, physical or mental disability, or sexual orientation in any work program or activity it conducts. The University of Nevada employs only United States citizens and aliens lawfully authorized to work in the United States.
 Copyright © 2012 University of Nevada Cooperative Extension

