

# Sections 4 and 5

## The Material Safety Data Sheet Pesticide Formulations

**Grower Pesticide Safety Course Manual © 2006**

**The page number at the top right corner of each slide tells you where to find the information in the Grower Pesticide Safety Course Manual. Follow along in your manual as you review each slide.**

# Material Safety Data Sheets

## Additional Information:

- Health Hazards
- Personal Safety
- Environmental Protection



**Ask your pesticide vendor for a MSDS – or  
check the manufacturer's web site**

# Canadian Centre for Occupational Health and Safety

[www.ccohs.ca](http://www.ccohs.ca)

The screenshot shows the homepage of the Canadian Centre for Occupational Health and Safety (CCOHS). At the top, there is a navigation bar with links for 'Français', 'Contact Us', 'Help', a search box with a 'SEARCH' button, and 'Canada Site'. Below this is a secondary navigation bar with 'Web Info Service', 'Products & Services', 'OSH Answers', and 'Education & Training'. A third row of navigation includes 'Home', 'About Us', 'E-News', 'Bringing Health to Work', 'Events', 'Resources', and 'Shop'. The main content area features three promotional banners: 'Products & Services for the working world' with an image of a man on a phone, 'OSH Answers Answering your health & safety questions' with an image of a woman, and 'Bringing Health to Work' with an image of a laptop. On the left, there is a 'Web Info Service' box with the text 'Online access to' and a paragraph describing CCOHS's mission. On the right, there is a 'More about:' section with links to 'Biological Hazards', 'Chemical and Materials Diseases, Disorders and Injuries', and 'Ergonomics / Human', along with 'Headlines' and 'Archive' links. A 'WHMIS: Understanding MSDSs' section is also visible, mentioning a new e-course.

Canadian Centre for Occupational Health and Safety  
Centre canadien d'hygiène et de sécurité au travail

Canada

**CCOHS**  
Canadian Centre for Occupational Health and Safety

Canada's National Occupational Health & Safety Resource

CCOHS promotes a safe and healthy working environment by providing information and advice about occupational health and safety.

**Web Info Service**  
Online access to

**Products & Services**  
for the working world

**OSH Answers**  
Answering your health & safety questions

**Bringing Health to Work**

**More about:**

- [Web Information Service](#)
- [MSDS Management Service](#)
- [Disc Information Service](#)

**Biological Hazards**

- [Chemical and Materials Diseases, Disorders and Injuries](#)
- [Ergonomics / Human](#)

**Headlines**      **Archive**

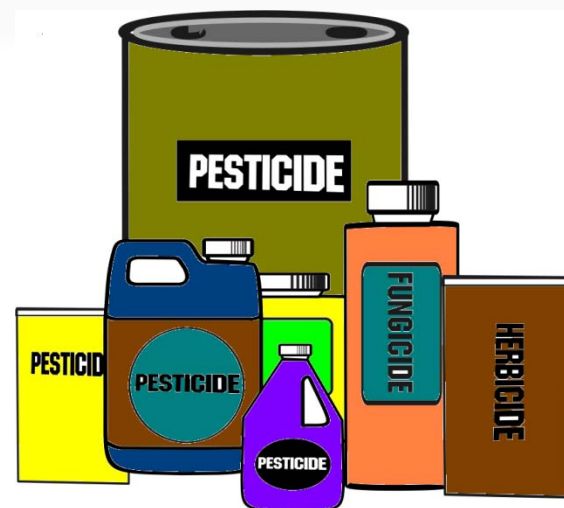
**WHMIS: Understanding MSDSs**  
New e-course from

# Pesticide Formulations

- active ingredients
- inert ingredients

Depends upon:

- the chemistry
- the toxicology
- how effective the pesticide is against the pest,
- the effect of the pesticide on the plant, animal, or environment
- how the pesticide will be applied, and
- the application rate.



# Abbreviations

<b>D</b>	<b>Dust</b>
<b>DF</b>	<b>Dry Flowable</b>
<b>EC</b>	<b>Emulsifiable Concentrate</b>
<b>F</b>	<b>Flowable</b>
<b>GR</b>	<b>Granular</b>
<b>L</b>	<b>Liquid</b>
<b>LO</b>	<b>Live Organism</b>
<b>P</b>	<b>Pellet</b>
<b>S</b>	<b>Solution</b>
<b>Sc</b>	<b>Sprayable Concentrate</b>
<b>SG</b>	<b>Soluble Granule</b>
<b>SN</b>	<b>Active Solution</b>
<b>SP</b>	<b>Soluble Powder</b>
<b>WD</b>	<b>Water Dispersible Granule</b>
<b>WG</b>	<b>Wettable Granule</b>
<b>WP</b>	<b>Wettable Powder</b>
<b>WS</b>	<b>Water Soluble Concentrate</b>



# Adjuvant

- **any substance added to a pesticide spray tank or formulation to improve the effectiveness of the active ingredient**

**Spray may stick to the surface better.**

**Increase/decrease evaporation.**

**Increase absorption into the plant.**

**Make spray droplets more uniform.**



# Physical Compatibility and Tank Mixes

**At least one of the product labels must give directions for tank mixing.**

**Some problems from mixing incompatible pesticides include:**

- **the hazards to the applicator may increase**
- **a chemical reaction may occur**
- **pest control may be reduced**
- **the mixture may leave unacceptable residues on crop**

**You are responsible for what happens if you mix pesticides that do not have tank mix directions on at least one of the labels.**

# Preparing a Tank Mix

- 1. Wettables (powders)**
- 2. Agitate**
- 3. Liquids**
- 4. Emulsifiable Concentrates**
- 5. Solutions and Surfactants**

**WALES**