Iowa FFA Floriculture Career Development Event 2013 Written Exam

1. Which of the following is not a primary color?
    a. Red
    b. Yellow
    c. Orange
    d. Blue

2. Complementary colors use 2 hues that_____on the color wheel.
    a. lie directly opposite
    b. are side by side
    c. are 3 colors apart
    d. none of the above

3. _____ is recognized throughout the United States and Canada annually on October 16th.
    a. Halloween
    b. National Boss Day
    c. National Grandparents' Day
    d. Mother's Day

4. Which of the following is a filler flower?
    a. Roses
    b. Baby's Breath
    c. Carnations
    d. Daisies

5. When wiring roses the most typical use is?
    a. Hook wiring
    b. Wrap around wiring
    c. Cross wiring
    d. Piercing

6. In corsages we use floral wire that is sold by gauge size. Which of the following gauge sizes would have the biggest diameter?
    a. 16 gauge b. 20 gauge c. 24 gauge d. 30 gauge

7. What color of rose represents friendship?
    a. Red b. Yellow c. Pink d. White

8. When refrigerating flowers for less than 2 days what is the ideal temperature in Fahrenheit?
    a. 32
    b. 37
    c. 42
    d. 47

9. Scientist who identifies plants is known as?
    a. Gardeners
    b. Herbologists
    c. Taxonomists
    d. Plantidentist

10. An imaginary line created by a series of repetitious elements is a _____ line.
    a. Actual
    b. Psychic
    c. Implied
    d. Vertical

11. In traditional floral designs the center of interest in visual activity is called _____.
    a. Focal Point
    b. Center Point
    c. Visual Point
    d. Mid Point

12. Which of these is not considered a warm color?
    a. Red
    b. Orange
    c. Purple
    d. Yellow

13. Which of these flowers is not considered a tropical flower?
    a. Orchid
    b. Protea
    c. Poppy
    d. Ginger

14. The pistil is the female part of the flower. Which of these is not part of the pistil?
    a. Style
    b. Ovary
    c. Stigma
    d. Filament

15. A botanically complete flower consists of:
    a. Pistil and Stamen
    b. Pistil, Stamen, Petals, Sepal
    c. Pistil, Stamen, Sepal, Stem
    d. Sepal and Pistil

16. What transports nutrients from the roots to the leaves?
    a. Arteries
    b. Xylem
    c. Phloem
    d. Tissue

17. Which of the following is the simplest method of plant material preservation?
    a. Freeze Drying
    b. Pressing
    c. Air Drying
    d. Treating with Glycerin

18. Euphorbia pulcherrima is the scientific name for:
    a. Easter Lily
    b. Poinsettia
    c. Shamrock
    d. Azale

19. What does the acronym AIFD stand for?
    a. American Institute of Floral Design
    b. American Industry of Floral Design
    c. American and International Floral Design
    d. None of the above

20. High style designs are _____ arrangements that emphasize shapes, angles, and clean lines.
    a. Asymmetrical
    b. Symmetrical
    c. Radical
    d. Open

21. Which of the following is a perennial?
    a. Dusty Miller
    b. Peony
    c. Geranium
    d. Coleus

22. Which of the following plants requires the most water?
    a. Aloe Vera
    b. Begonia
    c. Rubber Plant
    d. Hydrangea

23. This is a three color scheme composed of any hue, plus the two hues adjacent to its compliment?
    a. Double Compliment
    b. Split Complimentary
    c. Alternate
    d. Tetrad

24. Which is an example of a line flower?
    a. Iris
    b. Larkspur
    c. Lily
    d. Rose

25. The term _____ is defined as: a flow or movement characterized by the regular reoccurrence of elements or features.
    a. Repetition
    b. Transition
    c. Rhythm
    d. Sequencing

Iowa FFA Floriculture Exam Key

1. C
2. A
3. B
4. B
5. D
6. A
7. B
8. B
9. C
10. C
11. A
12. C
13. C
14. D
15. B
16. B
17. C
18. B
19. A
20. A
21. B
22. D
23. B
24. B
25. C

2013 Iowa FFA
Floriculture CDE
Phase VI - Problem Solving Activity
50 points – 20 minutes

Problem 1:
A florist has been asked to prepare an order for an upcoming wedding. The order consists of 15 corsages, 17 boutonnieres, and a bouquet. Each corsage costs the floral owner $3.50 in materials. Each boutonniere costs the floral owner $1.95 in materials, and the bouquet costs the floral owner $26.50 in materials. The floral owner is marking up all wholesale prices by 150 percent. In addition, the owner charges a 30% labor charge. What is the total cost of the flowers for this wedding?

A. $364.49
B. $386.36
C. $300.00
D. $280.38

Problem 2:
The local mall wants to purchase a #7 Dieffenbachia for an interior display in front of the new GAP store. What would be your selling price for the dieffenbachia if you wanted to make a 10% profit?

Wholesale price - $80.00
Mark-up - 60%

A. $140.80
B. $128.00
C. $48.00
D. $130.80

Problem 3:
FLOWERS 4 U just received an order from a customer that lives 37 miles away. They ordered 27 centerpieces for a large reception to be held that evening. The wholesale cost of each centerpiece is $15.29 each (does not include labor). Each centerpiece takes 40 minutes to make. The owner marks-up the wholesale prices by 150%, which includes the labor mark-up. The delivery charge is $27.50 (not taxable). If sales tax is 7%, what is the total bill for this order?

A. $1032.08
B. $1104.33
C. $1500
D. $1131.83

Problem 4:

A designer must be responsible for the contents of their designs. They also need to make sure the design is priced correctly. The owner of Freddies Florals has an order for a $50.00 arrangement in a basket. Plant and hard good materials are as follows:

4 – stems Leather leaf	$.25/stem
6 – stems Eucalyptus	$.50/stem
2- stems Star Gazers	$5.00/stem
11 – stems Red Carnations	$1.50/stem
½ bunch Heather	$6.00/bunch
1 - White basket	$5.00
1 - Oasis	$1.50/block
Labor	20%

What is the cost of the total fresh and greens?

A. $32.50
B. $33.50
C. $35.00
D. $42.00

Problem 5:

Allie has determined that the cost of labor is 25%. If you have an arrangement that you sell for $75.00, what is the labor cost?

A. $50.00
B. $27.50
C. $18.75
D. $22.50

2013 Iowa FFA
Floriculture CDE
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A. $364.49
B. $386.36
C. $300.00
D. $280.38

Answer: (15 x $3.50) + (17 x $1.95) + (1 x $26.50) = $112.15 x 150% = $168.23 + 112.15= $280.38
280.38 x .30 = $84.11 $280.38 + $84.11= $364.49
$364.49 x .06 tax = $21.87 $364.49 + $21.87= $386.36

Problem 2:
The local mall wants to purchase a #7 Dieffenbachia for an interior display in front of the new GAP store. What would be your selling price for the dieffenbachia if you wanted to make a 10% profit?

Wholesale price - $80.00
Mark-up - 60%

A. $140.80
B. $128.00
C. $48.00
D. $130.80

$80.00 x 60% = $48.00 $48 + $80 = $128.00 $128.00 x 10% = $12.80
$128.00 + $12.80 = $140.80

Problem 3:
FLOWERS 4 U just received an order from a customer that lives 37 miles away. They ordered 27 centerpieces for a large reception to be held that evening. The wholesale cost of each centerpiece is $15.29 each (does not include labor). Each centerpiece takes 40 minutes to

make. The owner marks-up the wholesale prices by 150%, which includes the labor mark-up. The delivery charge is $27.50 (not taxable). If sales tax is 7%, what is the total bill for this order?

A. $1032.08
B. $1104.33
C. $1500
D. $1131.83

answer: 27 x $15.29 = $412.83 $412.83 x 150% = $619.25 $619.25 + $412.83= $1032.08
$1032.08 x 7% tax = $72.25 $1032.08 + $72.25 = $1104.33 + 27.50 delivery = $1131.83

Problem 4:

A designer must be responsible for the contents of their designs. They also need to make sure the design is priced correctly. The owner of Freddies Florals has an order for a $50.00 arrangement in a basket. Plant and hard good materials are as follows:

4 – stems Leather leaf	$.25/stem
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11 – stems Red Carnations	$1.50/stem
½ bunch Heather	$6.00/bunch
1 - White basket	$5.00
1 - Oasis	$1.50/block
Labor	20%

What is the cost of the total fresh and greens?

A. $32.50
B. $33.50
C. $35.00
D. $42.00

(4 x $.25=1.00) (6 x $.50=3.00) (2 x $5.00 = 10.00) (11 x 1.50 = 16.50) (.5 x 6.00=3.00)
$1.00 + $3.00 + $10.00 + $16.50 + $3.00 = $33.50

Problem 5:

Allie has determined that the cost of labor is 25%. If you have an arrangement that you sell for $75.00, what is the labor cost?

A. $50.00
B. $27.50
C. $18.75
D. $22.50

$75.00 x $.25 = $18.75

2013 Iowa FFA Floriculture CDE
Phase V- Pesticide Use and Application

1. You go to work for a company who sprays pesticides for most of the greenhouses in Des Moines. One condition of your employment was for you to become certified to apply necessary pesticides. You research the requirements. You find that to become certified, you must:
   - **a.** obtain a private pesticide applicator's license.
   - **b.** obtain a public pesticide applicator's license.
   - **c.** obtain a certified handler's license.
   - **d.** obtain a commercial pesticide applicator's license.

2. As the owner of several greenhouses, you are very concerned about the safety of your employees. You want to use pesticides that have the least potential of causing poisoning of your employees. Which of these pesticides is the safest for humans?
   - **a.** Pesticide A has an LC_{50} of 15
   - **b.** Pesticide B has an LC_{50} of 20
   - **c.** Pesticide C has an LD_{50} of 15
   - **d.** Pesticide D has an LD_{50} of 4000
   - **e.** Not enough information to tell.

3. Which pesticide would you be least likely to use in a greenhouse?
   - **a.** Herbicide
   - **b.** Miticide
   - **c.** Fungicide
   - **d.** Nematicide

4. If you are routinely using organophosphate or carbamate pesticides, you should have:
   - **a.** a hemoglobin test every month to see if you are suffering from acute chemical poisoning.
   - **b.** a complete blood profile done every 3 months to test for chronic pesticide poisoning.
   - **c.** a cholinesterase test before you start the use of pesticides and periodically throughout the application season.
   - **d.** have a chemical detection blood test if you show any signs of acute chemical poisoning.

5. When using Integrated Pest Management (IPM) you should?
   - **a.** Use a small amount of pesticides regularly as a preventative treatment. This reduces the chances of having a severe outbreak of the pest and thus reduces the amount of pesticide in total needed.
   - **b.** Scout for pests on a regular basis. Use pesticides just as soon as you see the first sign of a pest.
   - **c.** Scout regularly. Then treat when the pests reach an economic threshold. Evaluate your control method including biological, mechanical, chemical, and cultural.
   - **d.** Use a well planned fertilizer and watering program that will prevent 95% of all disease and insect infestations.

6. Which choice accurately lists the 3 things that are necessary for diseases to develop?
    a. A susceptible host plant, a live pathogen, and a favorable environment
    b. Bright light, high temperature, and a shortage of moisture.
    c. Dim light, low temperature, and an excess of moisture.
    d. Extreme light conditions (too dark or too light), extreme temperature (too high or too low), and extreme moisture (too dry or too wet)

7. The letters PPE stands for
    a. Plant Pesticide Enforcement
    b. Personal Protective Equipment
    c. Pesticide Planning Environment
    d. People Protecting the Environment

Use the 2 MSDS forms to complete the following 3 questions.

8. Which statement is true?
    a. You should induce vomiting if either Sevin Ready to Spray Bug Killer or Malathion 50 % are swallowed.
    b. You should not induce vomiting if either Sevin Ready to Spray Bug Killer or Malathion 50 % are swallowed.
    c. You should induce vomiting if Sevin Ready to Spray Bug Killer is swallowed and not induce vomiting if Malathion 50 % is swallowed.
    d. You should not induce vomiting if Sevin Ready to Spray Bug Killer is swallowed and induce vomiting if Malathion 50 % is swallowed.

9. When comparing relative safety to the applicator of the 2 products above as measured by LD_{50} numbers
    a. They are virtually the same for both dermal and oral toxicity.
    b. Sevin is more toxic dermally; the two products are have nearly the same toxicity when swallowed.
    c. Sevin is less toxic dermally; the two products are have nearly the same toxicity when swallowed.
    d. Both the dermal and oral toxicity tests were performed on rats.

10. When comparing the two chemicals on traits that would determine how they should be stored, which is statement best compares their physical traits?
    a. Both decompose (become unstable) when they approach 120 degrees F.
    b. Malathion will withstand higher temperatures before it will boil.
    c. Neither chemical is expected to cause human cancer
    d. All are true.

May 2, 2001

Material Safety Data Sheet

Product Name: Acme/Gordon's MALATHION 50% Spray

MSDS No.: 893-5 **Version No.:** 012 **EPA Registration No.:** 33955-394

1. Basic Information:

Manufacturer: PBI/Gordon Corporation
Address: 1217 West 12th Street
City, State Zip: Kansas City, MO 64101-1407
Information Contact: Environmental, Health, & Safety Dept.
Information Telephone Number: (816)421-4070
Emergency Contact: Chemtrec
Emergency Telephone Number: (800)424-9300

2	Health
2	Flammability
0	Reactivity
B	Pers. Protection

Last Update: 8/10/00

Chemical State: [X] Liquid [ ] Gas [ ] Solid
Chemical Type: [ ] Pure [X] Mixture

2. Ingredients:

[ ] Trade Secret *(ND = Not Disclosed)*

CAS No.	Chemical Name	% Range	EHS	NTP	IARC	SUB Z	SARA 313	OSHA PEL	ACGIH TLV	Other Limits
95636	1,2,4-Trimethylbenzene	12.3%	N	N	N	N	Y	NI	25 ppm	25 ppm
98828	Cumene	0.6%	N	N	N	Y	Y	50 ppm	50 ppm	50 ppm
100414	Ethyl benzene	0.2%	N	N	N	Y	N	100 ppm	100 ppm	100 ppm
121755	Malathion	50.0%	N	N	N	Y	Y	15 mg/m3	10 mg/m3	10 mg/m3
64742956	Petroleum solvent	24.2%	N	N	N	Y	N	500 ppm	NI	50 ppm
1330207	Xylenes	1.2%	N	N	N	Y	Y	100 ppm	100 ppm	100 ppm

3. Hazardous Identification:

Hazard Catagory:
[X] Acute [X] Chronic [X] Fire [ ] Pressure [ ] Reactive

Hazardous Identification Information:

4. First Aid Measures:

Route(s) of Entry:
Contact, inhalation, ingestion.

Health Hazards (Acute and Chronic):
EYES: Contact may cause irritation and/or burning.

SKIN: Contact may cause irritation. .

INHALATION: May be irritating to respiratory tract.

INGESTION: May be irritating to gastrointestinal tract.

CHRONIC EFFECTS: Repeated or prolonged overexposure to solvents may effect liver and kidneys. Continuous overexposure to organophosphates may cause flu-like illness. Acute poisoning may cause dizziness, nausea, diarrhea and sweating.

Signs and Symptoms:
Continuous overexposure to organophosphates may cause flu-like illness. Acute poisoning may cause dizziness, nausea, diarrhea and sweating.

Medical Conditions Generally Aggravated by Exposure:
NI

First Aid Measures (Continued)

Emergency First Aid Procedure:
IF SWALLOWED: Call a physician or Poison Control Center immediately. Contains petroleum solvent. Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration, and monitor for breathing difficulty.

IF IN EYES: Flush eyes with plenty of water. Get medical attention.

IF ON SKIN: Remove contaminated clothing and wash affected area with soap and water. Get medical attention if irritation persists.

IF INHALED: Remove victim to fresh air and apply artificial respiration if indicated. Get medical attention.

Other Health Warnings:
NOTE TO PHYSICIAN: Malathion upon repeated, prolonged or careless exposure may cause cholinesterase inhibition. Atropine is antidotal. Aromatic solvent may present aspiration hazard. Gastric lavage is indicated if product was swallowed.

5. Fire Fighting Measures:

Flash Point: 106°F **F.P. Method:**
Lower Explosive Limit: NI
Upper Explosive Limit: NI

Fire Extinguishing Media:
Dry chemical, foam, CO2, water.

Special Fire Fighting Procedures:
Wear self-contained breathing apparatus and full protective clothing. Prevent pesticide contamination of surface water by fire control runoff.

Material Safety Data Sheet

Product Name: Acme/Gordon's MALATHION 50% Spray

MSDS No.: 893-5 **Version No.:** 012 **EPA Registration No.:** 33955-394

Fire Fighting Measures (Continued)

If water is contaminated, advise local authorities. Decontaminate emergency personnel with soap and water before leaving the fire area.

Unusual Fire and Explosion:
NI

6. Accidental Release Measures:

Steps to be Taken in Case Material is Released or Spilled:
See Section 8 for Personal Protective Equipment. Collect spilled material into containers for reuse or disposal. Cover and label the containers. Wash the area with soap and water. Absorb the water with absorbent material, and collect into container for disposal. Do not allow wash water to contaminate water supplies.

7. Handling and Storage:

Precautions to be Taken:
Store in original container in a locked storage area inaccessible to children and domestic animals.

Other Precautions:
NI

8. Exposure Controls/Personal Protection:

Ventilation Requirements:
Good local ventilation.

Personal Protective Equipment:
PROTECTIVE CLOTHING: Long sleeves and pants; chemical resistant gloves and shoes.

EYE PROTECTION: Safety glasses with side shields, or goggles.

RESPIRATORY PROTECTION: If exposure limits may be exceeded, wear a dust/mist filtering respirator (MSHA/NIOSH approval number prefix TC-21C), or a NIOSH approved respirator with any N, R, P or HE filter.

9. Physical and Chemical Properties:

Boiling Point: 300°F **Melting Point:** NI

Evaporation Rate (Butyl Acetate = 1) : <1

Vapor Pressure (mm Hg.): <16@20°C

Vapor Density (Air = 1): >1

Specific Gravity (H20 = 1): 1.05100

Solubility in Water: Emulsifiable.

Appearance and Odor: Light yellow liquid; mercaptan odor

Other Information:
Density: 8.7 pounds/gallon

10. Stability and Reactivity:

Stability:
May be unstable at >120 degrees F, leading to non-hazardous decomposition. High heat causes rapid decomposition. Reaction with strong base may generate excessive heat.

Incompatibility (Materials to Avoid):
Strong alkalies and strong oxidizers.

Decomposition/By-Products:
Burning may produce hydrogen sulfide, methyl mercaptan, dimethyl sulfide, and oxides of sulfur, carbon and phosphorus.

Stability and Reactivity (Continued)

Hazardous Polymerization:
Will not occur.

11. Toxicological Information:

Dermal LD50 (rabbit): 4100 mg/kg body weight.

Oral LD50 (rat): >2000 mg/kg body weight.

12. Ecological Information:

This pesticide is toxic to fish, aquatic invertebrates, and aquatic life stages of amphibians. For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Drift and runoff may be hazardous to aquatic organisms in areas near the application site. Do not contaminate water when disposing of equipment washwater.

This product is highly toxic to bees exposed to direct treatment on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

13. Disposal Considerations:

PESTICIDE DISPOSAL: Securely wrap container in several layers of newspaper and discard in trash.

CONTAINER DISPOSAL: Do not reuse container. Rinse thoroughly before discarding in trash

Dispose of drum(s), absorbent material and waste according to Local, State and Federal regulations.

14. Transport Information:

The following guidlines apply for domestic ground transport. If shipping by air or ocean, please contact our Transportation Department.

Freight Class: Insecticides, NOI - NMFC Class #102120

In our current available sizes, under DOT regulations, this product must be labeled and described as:

CONSUMER COMMODITY, ORM-D

15. Regulatory Information:

OSHA STATUS: This product is hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

TSCA STATUS: This product is exempt from TSCA Regulation under FIFRA Section 3(2)(B)(ii) when used as a pesticide.

CERCLA REPORTABLE QUANTITY: 200 pounds of the formulation which contains 100 pounds of Malathion

SARA TITLE III:
SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES: None
SECTION 311/312 HAZARD CATEGORIES: Immediate Health Hazard, Delayed Health Hazard, Fire Hazard
SECTION 313 TOXIC CHEMICALS: Tirmethybenzene CAS# 95-63-6, Cumene CAS# 98-82-8, Ethyl benzene CAS# 100-41-4, Malathion CAS# 121-75-5, Xylenes CAS# 1330-20-7

RCRA STATUS: When discarded in its purchased form, this product is a listed RCRA hazardous waste and should be managed as a hazardous waste. (40 CFR Part 261.20-24)

Material Safety Data Sheet

Product Name: Acme/Gordon's MALATHION 50% Spray

MSDS No.: 893-5 **Version No.:** 012 **EPA Registration No.:** 33955-394

16. Other Information:

REASON FOR ISSUE: To revise MSDS to the ANSI Z400.1-1998 format

NOTE: NI means not indicated.

The information and statements in this Material Safety Data Sheet are believed to accurately reflect the scientific evidence used in making the hazard determination, but is not to be construed as a warranty or representation for which we assume legal responsibiltiy. Additional information may be necessary or desirable depending on particular, exceptional or variable conditions or circumstances of use or storage or becuase of locally applicable laws or government regulations. Therefore, you should use this information only as a supplement to other information available to you and must make independent determinations of the suitability of the information for your particular circumstances or conditions and of the completeness of the information available from all sources to assure both the proper use of the material described herein and the safety and health of employees.

TechPac, LLC.

P.O. Box 24830 – Lexington, KY 40524

Material Safety Data Sheet

GardenTech Sevin Ready to Spray Bug Killer
This product is used by Homeowners and Professionals
September 2009 Product Code(s): S7300, S7300D

SECTION 1 - PRODUCT IDENTIFICATION

Medical Emergency: 800-420-9347 Product Information: 866-945-5033
Transportation or Spill: 800-424-9300
EPA Reg. Number: 264-334-71004
Chemical Name: Carbaryl; [1 Naphthyl N-Methylcarbamate]
Trade Name: Sevin ®brand Carbaryl Insecticide

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SECTION 2 - COMPOSITION

Component	Percentage	ACGIH Exposure Limit	ACGIH Exposure Limit
Carbaryl [63-25-2]	22.5%	TLV - 5 mg/m3	PEL - 5 mg/m3
Ethanol [57-55-6]		TLV – 1000 ppm	PEL – 1000 ppm
Propylene glycol		AIHA – 50 ppm	

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SECTION 3 - HEALTH HAZARD DATA

EMERGENCY OVERVIEW

An off-white to pale yellow liquid with a phenolic odor:
* Harmful if swallowed or absorbed through the skin.
* Extremely toxic to aquatic and estuarine invertebrates.
* Highly toxic to bees.

ROUTE(S) OF ENTRY: Ingestion and absorption.

ACUTE EYE EFFECTS: Causes redness, irritation, and tearing.

ACUTE SKIN EFFECTS: Harmful if absorbed through the skin. May produce symptoms similar to those from ingestion.

ACUTE INGESTION EFFECTS: Harmful if ingested. This product causes reversible cholinesterase inhibition. Repeated overexposure may cause more severe cholinesterase inhibition with more pronounced signs and symptoms. May lead to rapid onset of nausea, vomiting, diarrhea, abdominal pain, involuntary shaking, excess salivation, pinpoint pupils, blurred vision, profuse sweating, temporary paralysis, respiratory depression, and convulsions.

ACUTE INHALATION EFFECTS: Harmful if inhaled. May produce symptoms similar to those from ingestion.

CHRONIC EFFECTS: This product does not contain any ingredient designated by IARC, NTP, ACGIH or OSHA as probable or suspected human carcinogens.

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SECTION 4 - FIRST AID

IF SWALLOWED: If victim is conscious and alert, give 2-3 glasses of water to drink and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. Vomiting may occur spontaneously. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.

IF IN EYES: Hold eyelids open and flush with a steady, gentle stream of water for at least 15 minutes. Seek medical attention.

IF ON SKIN: In case of contact, immediately wash with plenty of soap and water for at least 5 minutes. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before reuse.

IF INHALED: Remove victim from immediate source of exposure and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek medical attention.

MEDICAL CONDITIONS POSSIBLE AGRAVATED BY EXPOSURE: Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis. Skin contact may aggravate existing skin disease.

SECTION 4 - FIRST AID (continued)

NOTE TO PHYSICIAN: All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

This product contains a methyl carbamate insecticide, which is a cholinesterase inhibitor.

Overexposure to this substance may cause toxic signs and symptoms due to stimulation of the cholinergic nervous system. These effects of overexposure are spontaneously and rapidly reversible.

Specific treatment consists of parenteral atropine sulfate. Improve tissue oxygenation as much as possible before administering atropine to minimize the risk of ventricular fibrillation. Mild cases may be given 1 to 2 mg intramuscularly every 10 minutes until full atropinization has been achieved and repeated thereafter whenever symptoms reappear. Severe cases should be given 2 to 4 mg intravenously every 10 minutes until fully atropinized, then intramuscularly every 30 to 60 minutes as needed to maintain the effect for at least 12 hours. Dosages for children should be appropriately reduced. Complete recovery from overexposure is to be expected within 24 hours.

To aid in confirmation of a diagnosis, urine samples should be obtained within 24 hours of exposure and immediately frozen.

Persons regularly exposed in manufacturing and handling this product should have a pre-exposure and periodic red blood cell cholinesterase level checks.
Narcotic and other sedatives should not be used. Further, drugs like 2-PAM (pyridine-2-aldoxime methiodide) are NOT recommended.

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SECTION 5 - FIRE & EXPLOSION HAZARDS

FLASH POINT: > 93 C (200 F). Flammability Class: WILL BURN
EXTINGUISHING MEDIA : Recommended (small fires): CO_2 or Dry Chemical. Recommended (large fires): Alcohol Foam, Polymer Foam or Water Spray
SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Keep unnecessary people away, isolate hazard area and deny entry. Evacuate residents who are downwind of fire. Dike area to prevent runoff and contamination of water sources. Dispose of fire control water later. Persons who may have been exposed to contaminated smoke should be immediately examined by a physician and checked for symptoms of poisoning. The symptoms should not be mistaken for heat exhaustion or smoke inhalation.
UNUSUAL FIRE OR EXPLOSION HAZARDS: Product will burn under fire conditions.
HAZARDOUS DECOMPOSITION MATERIALS: Oxides of nitrogen, oxides of carbon, methyl isocyanate (trace; no adverse effects expected)

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SECTION 6 - SPILL AND LEAK PROCEDURES

EVACUATION PROCEDURES AND SAFETY: Wear appropriate protective gear for the situation. See Personal Protection information in Section 8.

CONTAINMENT OF SPILL: Dike spill using absorbent or impervious materials such as earth, sand or clay. Follow procedure described below under Cleanup and Disposal of Spill. Collect and contain contaminated absorbent and dike material for disposal.

SECTION 6 - SPILL AND LEAK PROCEDURES (continued)

CLEANUP AND DISPOSAL OF SPILL: Recover material, if possible. Absorb with vermiculite or other inert absorbent. Shovel up into an appropriate closed container (see Section 7: Handling and Storage). Clean up residual material by washing area with water. Decontaminate tools and equipment following cleanup.

ENVIRONMENTAL AND REGULATORY REPORTING: Runoff from fire control or dilution water may cause pollution. Prevent material from entering public sewer system or any waterways. Spills may be reportable to the National Response Center (800-424-8802) and to state and local agencies. If spilled on the ground, the affected area should be removed to a depth of one or two inches and placed in an appropriate container for disposal.

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SECTION 7 - STORAGE & HANDLING

MINIMUM/MAXIMUM STORAGE TEMPERATURES: < 38 C (100 F)

HANDLING: Avoid direct or prolonged contact with skin and eyes. Do not ingest.

STORAGE: Store in original container. Store in an area that is cool, dry, away from foodstuffs or animal feed, and out of reach of children and animals.

****

SECTION 8 - SPECIAL PROTECTION INFORMATION

INTRODUCTORY REMARKS: These recommendations provide general guidance for handling this product. Because specific work environments and materials handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

ENGINEERING CONTROLS: Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: general area dilution/exhaust ventilation.

RESPIRATORY PROTECTION: When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Under normal conditions, in the absence of other airborne contaminants, the following devices should provide protection from this material up to the conditions specified by the appropriate OSHA, WHMIS or ANSI standard(s): Air-purifying respirator (half-mask/full-face) respirator with cartridges/canister approved for use against pesticides. Under conditions immediately dangerous to life and health, or emergency conditions with unknown concentrations, use a full-face positive pressure air-supplied respirator equipped with an emergency escape air supply unit or use a self-contained breathing apparatus unit.

EYE/FACE PROTECTION: Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use indicated for this material.

Eye contact should be prevented through use of chemical safety glasses with side shields or splash proof goggles. An emergency eye wash must be readily accessible to the work area.

SECTION 8 - SPECIAL PROTECTION INFORMATION (continued)

SKIN PROTECTION: Skin contact should be prevented through use of suitable protective clothing, gloves and footwear, selected with regard for use conditions and exposure potential. Consideration must be given both to durability as well as permeation resistance.

WORK PRACTICE CONTROLS: Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with our or handling this material:

1) Do not store, use, nad/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
3) Wash exposed skin promptly to remove accidental splashes of contact with this material
4) Do not take clothing/objects contaminated by this material off the work site.
5) Shower and change into street clothes before leaving the work site.

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SECTION 9 - PHYSICAL DATA

Physical Appearance: Off-white to pale yellow liquid
Odor: phenolic
Vapor Pressure: 18.1 mmHg at 20 C (68 F)
Specific Gravity: 1.05 at 20 C (68 F)
pH: 4 to 5 at 5 wt/wt%
Water Solubility: Miscible
Melting Point Range: Not Available
Freezing Point Range: -3 C (27 F)
Boiling Point Range: 100 C (212) at 760 mmHg
Vapor Density: 0.62
Molecular Weight: 201.2

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SECTION 10 - REACTIVITY DATA

Stability: Stable.
Polymerization: Will not occur
Conditions To Avoid: Extreme heat, open flame
Materials/Chemicals to Avoid: Strong acids and bases
Decomposition Temperature Range: 40 C (104 F)
Thermal Decomposition Products: Oxides of nitrogen, oxides of carbon, methyl isocyanate (trace; no adverse effects expected)

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SECTION 11 - TOXICOLOGICAL INFORMATION

Acute Eye Irritation (rabbit): Minimally irritating
Acute Skin Irritation (rabbit): Minimally irritating
Acute Dermal Absorption (rabbit): LD_{50} > 2,000 mg/kg
Acute Inhalation: No test data found for product.
Acute Ingestion (rat): LD_{50} = 1,947 mg/kg
Chronic Toxicity: This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens.

Carbaryl has been shown to cause tumors in laboratory animals in lifetime feeding studies. Carbaryl, when administered by various routes, at doses toxic to the maternal animals, has been shown to produce developmental toxicity in a number of species. Carbaryl produces no teratogenic effect in the absence of maternal toxicity.

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TechPac, LLC.

P.O. Box 24830 – Lexington, KY 40524

Material Safety Data Sheet

GardenTech Sevin Ready to Spray Bug Killer
This product is used by Homeowners and Professionals
September 2009 Product Code(s): S7300, S7300D

SECTION 12 - ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: The following data is based on the technical grade active ingredient(s) (TGAI).

Ecotoxicological Information and Interpretation:

LC50 (mallard duck) > 5,000 mg/kg/8
Dietary concentration LC50 (bobwhite quail) > 5,000 mg/kg/8 days
Dietary concentration LC50 (rainbow trout) = 1,950 ug/1/96 hr
Dietary concentration LC50 (bluegill sunfish) = 6,769 ug/1/96 hr

****

SECTION 13 - DISPOSAL

WASTE DISPOSAL METHOD: Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Please be advised that state and local requirements for waste disposal may be more restrictive or otherwise different from federal laws and regulations. Consult state and local regulations regarding the proper disposal of this material.

EPA Hazardous Waste - YES

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SECTION 14 - TRANSPORTATION

Proper Shipping Name: GardenTech Sevin Ready To Spray Bug Killer
Technical Name (if applicable):
UN Initial & Number: Not regulated Class: Packing Group: RQ: Not required
Hazard Labels: None required

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SECTION 15 - REGULATORY INFORMATION

INVENTORY STATUS

TSCA	Y
DSL	N
EINECS/ELINCS	N
AICS	N
MITI	N
KECL	N

Y = All ingredients are on the inventory.
N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing.

FEDERAL REGULATIONS:

SARA Title III Hazard Classes:

Fire Hazard	- NO
Reactive Hazard	- NO
Release of Pressure	- NO
Acute Health Hazard	- YES
Chronic Health Hazard	- YES

SARA 313 Chemicals: Carbaryl, CAS# 63-25-2, 22.5%

SECTION 15 - REGULATORY INFORMATION (continued)

SARA Extremely Hazardous Substances (EHS)/CERCLA Hazardous Substance: Carbaryl, 100 lbs

STATE REGULATIONS:

California Proposition 65: This product does not contain any components that are regulated under California Proposition 65.

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SECTION 16 - OTHER INFORMATION
NOTICE FROM TECHPAC, LLC.

The information contained herein is offered only as a guide to the handling of this specific material. Since such information does not relate to use of the material with any other material or in any process, any person using this information must determine for himself its suitability for any particular application. The buyer and user assumes all risk and liability of use, storage and/or handling of this product not in accordance with the terms of the product label.

ABBREVIATIONS KEY:
ACGIH – American Conference of Governmental Industrial Hygienists
OSHA – Occupational Safety and Health Administration
TLV – Threshold Limit Value
PEL – Permissible Exposure Limit
TWA – Time Weighted Average
STEL – Short Term Exposure Limit
NTP – National Toxicology Program
IARC – International Agency for Research on Cancer
ND – Not Determined