

Adult Basic Education  
**Science**

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**Science 3101**  
**Matter and Chemical Change**

**Study Guide**

**Credit Value:** 1

**Texts:** *science.connect1*; Colbourne, Fernandez, et al; McGraw-Hill Ryerson; 2002.  
*science.connect.2*; Colbourne, Fehres, et al; McGraw-Hill Ryerson; 2003.

**Science Courses [General College Profile]**

Science 2100A

Science 2100B

Science 2100C

**Science 3101**

Science 3102

Science 3103

Science 3104

Science 3105

Science 3106



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## To the Student

### I. Introduction to Science 3101

Science 3101, *Matter and Chemical Change*, introduces you to chemicals and chemical reactions and the role that they play in daily life.

The course begins with a discussion of ways that chemicals are useful and how to use them safely. You will be introduced to two chemical information safety systems. You learn about states and properties of matter and how to tell the difference between a pure substance and a mixture.

In Unit 2, you investigate pure substances, elements and compounds. You learn your way around the periodic table and become familiar with names and formulas for some common elements and simple compounds.

In Unit 3, you investigate mixtures. You learn the difference between solutions and mechanical mixtures. You investigate concentration and solubility and are introduced to acids, bases and the pH scale.

In Unit 4, you take a closer look at some everyday chemical reactions. You investigate how substances change during a reaction and how energy is involved in every chemical reaction. You are introduced to the use of word equations to represent chemical reactions. You finish the course by applying the knowledge that you have gained to investigate acid deposition.

You will be required to complete three **Assignments** and three **Core Labs** in this course. Your instructor may ask you to complete additional assignments and/or laboratory investigations.

Two textbooks are needed for this course; *science.connect1*; Colbourne, Fernandez, et al; McGraw-Hill Ryerson; 2002 and *science.connect.2*; Colbourne, Fehres, et al; McGraw-Hill Ryerson; 2003.

**Note:**

**You cannot get credit for Science 3101 if you previously received credit for either Science 1206 in high school or Chemistry 1102 in ABE.**

### II. Use of Science Study Guides

Before beginning this course, ensure you have the text and any other resources needed (*see the information in the Introduction to this course for specifics*).



## To the Student

As you work through the Study Guide, you will see that it is divided according to the Units listed in the Table of Contents. When you open a unit it will have the following components:

### Reading for this Unit:

Here you will find the chapters, sections and pages of the text you will use to cover the material for this unit. Skim the sections of the textbook, look at the titles of the sections, scan the figures and read any material in the margins. Once you have this overview of the unit, you are ready to begin. Do not be intimidated by the content. You will work through the text, section by section, gaining knowledge and understanding of the material as you go.

### References and Notes

This left hand column guides you through the material to read from the text. Read any highlighted notes that follow the reading instructions. The symbols   direct you to the questions that you should complete when finished a reading assignment..

### Work to Submit

You come across three (4) headings in this right hand column.

#### Writing:

This section comprises your notes for the unit. Here you will find either written questions or references to specific questions or problems from your text. You may want to write out each question followed by the answer. This material should be checked by your instructor before moving on to the next unit. Mathematical problems should have their solutions checked as you go.

#### Laboratory:

This section indicates if there is a Core Lab that should be completed for the unit. Let the instructor know in advance that you will be ready for the lab. A lab report should be submitted for each Core Lab. Your instructor will provide guidelines as to how s/he wants the report written.

#### Assignment:

This section indicates if there is an assignment that should be completed for the Unit. The information in the “References and Notes” column will indicate how you obtain the assignment. These assignments frequently relate the science content to technology, society and the environment.

#### Computer:

This section indicates that you will use a computer and a printer to complete some of the required work for the course. Ask your instructor for help if you are not sure how to use the computer. You will be required to print out some material each time you do the computer work and the printouts should be included with the written notes.

## To the Student

### III. Recommended Evaluation

Written Notes	10%
Labs/Assignments	20%
Test(s)	20%
Final Exam ( <i>entire course</i> )	<u>50%</u>
	100%







## Unit 1 - Matter



To fulfill the objectives of this unit, students should complete the following:



**Reading for this unit:** *science.connect1*, Chapter 1, pages 4 - 19.

### References and Notes

Study pages 6 - 9. Then answer questions 1.1 - 1.4 of the first assignment  

**Note:** The first part of this unit (questions 1.1 - 1.5) is covered by completion of an assignment. You should pass the completed assignment in to your instructor for marking. You **will not** be tested on the material covered in the assignment.

Launch the **WHMIS** lesson on your computer, and follow the instructions to work your way through it. Complete 1.5  

Study pages 10 - 12. Then answer questions 1.6 - 1.10  

### Work to Submit

#### Assignment I:

- 1.1 Give four examples of harmful chemicals often found in a home, name a product in which you would find each, and indicate the possible dangers of each.
- 1.2 Name and briefly explain the 3 ways that WHMIS information is provided.
- 1.3 Using the *Sample WHMIS Label* and the *Sample MSDS* found in Appendix A, complete the Find Out Activity, *A Closer Look at WHMIS*, on page 8.
- 1.4 Complete the *Safety Symbol Inventory* in Appendix A.



#### Computer:

- 1.5 Print out the *WHMIS Symbol Table* and the *Certificate of Completion*. Include these with your assignment.

#### Writing:

- 1.6 Define **matter**.
- 1.7 Describe the **particle theory of matter**.

## Unit 1 - Matter



References and Notes	Work to Submit
<p data-bbox="203 720 574 789"><i>Study pages 15 - 17. Then answer questions 1.11 - 1.12</i></p> <p data-bbox="203 791 266 821"> </p> <p data-bbox="203 1199 610 1377"><b>Note:</b> <i>This is the end of Unit 1. You should check with your instructor to see if there is review work or any other additional work for this unit.</i></p>	<p data-bbox="665 388 1386 491">1.8 Using the particle theory, explain the three states of matter. (Be sure to describe the spacing and movement of particles for each.)</p> <p data-bbox="665 535 1365 638">1.9 Explain the difference between physical and chemical properties and give three examples of each.</p> <p data-bbox="665 682 1344 751">1.10 Complete questions 3 and 4 from <i>Check Your Understanding</i> on page 15.</p> <p data-bbox="665 795 1411 974">1.11 a) Explain the difference between the particles of a <b>pure substance</b> and a <b>mixture</b>.  b) Give two examples of pure substances and two examples of mixtures.</p> <p data-bbox="665 1018 1252 1087">1.12 Complete question 1 from <i>Check Your Understanding</i> on page 19.</p>

## Unit 2 - Elements and Compounds

To fulfill the objectives of this unit, students should complete the following:

**Reading for this unit:** *science.connect1*, Chapter 2, pages 22 - 37.

### References and Notes

Study pages 24 - 27. Then answer questions 2.1 - 2.8  

**Note:** Look carefully at Figures 2.2 and 2.3 and the Periodic Table inside the back cover of the text. Notice that there is one block in the Periodic Table for each element. Take note of the information presented in each block.

### Work to Submit

#### Writing:



- 2.1 Define **element**.
- 2.2 What is the **periodic table**?
- 2.3 What is the difference between a **group** and a **period** in the periodic table?
- 2.4 Copy and complete the following table:



Element Name	Element Number	Symbol	Mass	State of Matter
Silver				
	29			
		Na		
			32.1	



- 2.5 Describe 4 differences in properties between metals and non-metals.
- 2.6 Note the stair-step line in the periodic table.
  - a) Are **metals** on the right or left of that line?
  - b) Are **non-metals** on the right or left of that line?
- 2.7 Where are **metalloids** located in the periodic table?
- 2.8 Complete questions 2 and 3 in *Check Your Understanding* on page 30.



## Unit 2 - Elements and Compounds

### References and Notes



Refer to page 28 to answer question 2.9  

Launch the **Periodic Table** lesson on your computer and follow the instructions to work your way through it. Complete 2.10  

Study pages 30 - 31. Then answer questions 2.11 - 2.12  

Refer to Investigation 2-C, **Decomposition Reaction**, page 32, to do the laboratory.  

**Note:** See your instructor to find out what needs to be included in your **Lab Report**.

Study pages 35 - 36. Look carefully at Figure 2.13 and make sure that you understand it. Then do questions 2.14 and 2.15  

**Note:** This is the end of Unit 2. You should check with your instructor to see if there is review work or any other additional work for this unit.

### Work to Submit

#### Writing:

2.9 Copy and complete the table from *Investigation 2-A*. (You need not answer the questions at the bottom of the page.)

#### Computer:

2.10 Print out the *Certificate of Completion*. Include it with your notes.

#### Writing:

2.11 Define **compound**.

2.12 What is a **decomposition reaction**?

#### Laboratory:

2.13 Complete Investigation 2-C. Pass your 'Lab Report' in to your instructor for marking.

#### Writing:





2.14 Complete the Find Out Activity, *Interpreting Chemical Formulas*, on page 37.

2.15 Complete question 2 from *Check Your Understanding* on page 37.

## Unit 3 - Mixtures

To fulfill the objectives of this unit, students should complete the following:

**Reading for this unit:** *science.connect1*;  
Chapter 3, Sections 3.1 - 3.3; pages 40 - 49;  
Chapter 4, Section 4.1, page 60; Section 4.2; pages 63 - 69.

References and Notes	Work to Submit
<p>Study pages 42 - 43. Then answer questions 3.1 - 3.4  </p> <p>Study pages 45 - 46. Then answer questions 3.5 - 3.8  </p> <p><b>Note:</b> A general way to show concentration is: <b>concentration = mass/volume.</b> This means it can be expressed as any unit of mass divided by any unit of volume.</p>	<p><b>Writing:</b></p> <p>3.1 Define <b>solution</b>.</p> <p>3.2 Explain the difference between a <b>mechanical mixture</b> and a solution.</p> <p>3.3 Name and briefly describe the two parts of a solution.</p> <p>3.4 Complete questions 1, 2, and 3 in <i>Check Your Understanding</i> on page 44.</p> <p>3.5 a) Define <b>concentration</b>. b) What unit is commonly used to express concentration?</p> <p>3.6 A saline solution is a solution of salt in water. What does it mean to say a saline solution has a concentration of 1.0g/L?</p> <p>3.7 Define <b>solubility</b>.</p> <p>3.8 a) Explain the difference between <b>soluble</b> and <b>insoluble</b>. b) Give 2 examples of substances that are soluble in water and 2 examples of substances that are not soluble in water.</p>

## Unit 3 - Mixtures

### References and Notes

Refer to page 47 to do question 3.9 (the second assignment for the course) ▶▶

**Note:** You may need to discuss with your instructor how to draw a line graph.

Refer to Investigation 3-B, **What is the Best Solvent?**, page 48 to do the laboratory. ▶▶

**Note:** See your instructor to find out what needs to be included in your **Lab Report**.

Study page 60. Then answer question 3.11. ▶▶

Study pages 63 - 65. Then answer questions 3.12 - 3.14 ▶▶▶

**Note:** Look carefully at Figure 4.6 to see the pH of some common substances and decide whether they are acids or bases.

### Work to Submit

#### Assignment II:

3.9 Complete Investigation 3-A, *How Does Temperature Affect Solubility?* Pass your work in to your instructor for marking.

#### Laboratory:

3.10 Complete Investigation 3-B. Pass your **Lab Report** in to your instructor for marking.

#### Writing:

3.11 a) Explain the difference between a **concentrated** and a **dilute** solution.  
b) How could you change a solution from concentrated to dilute?



3.12 Write definitions for **acid**, **base**, and **neutral**.

3.13 What is an **indicator**?

3.14 What is the **pH scale**?

## Unit 3 - Mixtures

### References and Notes

*Launch the **Acids and Bases** lesson on your computer and follow the instructions to work your way through it. Complete 3.15  *

**Note:** *This is the end of Unit 3. You should check with your instructor to see if there is review work or any other additional work for this unit.*

### Work to Submit

#### Computer:

3.15 Print out the *Certificate of Completion*. Include it with your notes.

## Unit 4 - Chemical Reactions

To fulfill the objectives of this unit, students should complete the following:

**Reading for this unit:** *science.connect2*;  
Chapter 2, Sections 2.1 - 2.4, pages 24 - 35;  
Chapter 3, Section 3.1, pages 42 - 43;  
Chapter 4, Section 4.1, pages 64 - 65.

### References and Notes

*Note that you will be using a different text, science.connect2, for the rest of the course.*

Study pages 24 - 25. Then answer questions 4.1 - 4.2 ▶▶

Refer to Investigation 2-A, *Identifying Common Gases*, page 26, to do the laboratory. ▶▶

*Note: See your instructor to find out what needs to be included in your Lab Report.*

Study pages 28 - 29. Then answer questions 4.4 - 4.7 ▶▶

### Work to Submit

#### Writing:

- 4.1 Define **chemical reaction**.
- 4.2 Give 3 examples of common useful chemical reactions.

#### Laboratory:

- 4.3 Complete Investigation 2-A. Pass your **Lab Report** in to your instructor for marking.



#### Writing:

- 4.4 Explain what is meant by **reactants** and **products**.
- 4.5 Define **combustion**.
- 4.6 Define **neutralization**.





## Unit 4 - Chemical Reactions



### References and Notes



Refer to Investigation 2-B, *Investigating Chemical Reactions*, pages 32 - 33, to do the laboratory.  

**Note:** You may only be expected to complete certain parts of this investigation. Check with your instructor.

**Note:** See your instructor to find out what needs to be included in your **Lab Report**.

Study pages 31 - 34. Then answer question 4.9.  

Study page 35. Then answer question 4.10  

Launch the **Chemical Reactions** lesson on your computer and follow the instructions to work your way through it. Complete 4.11  

### Work to Submit

4.7 Copy and complete the following chart:

Reaction	Reactants	Products
combustion		
neutralization		

### Laboratory:

4.8 Complete Investigation 2-B. Pass your **Lab Report** in to your instructor for marking.

### Writing:

4.9 List five pieces of evidence that show that a chemical reaction has occurred.

4.10 Explain the difference between an **exothermic** and an **endothermic** reaction and give an example of each.

### Computer:

4.11 Print out the **Summary** and the **Certificate of Completion**. Include them with your notes.

## Unit 4 - Chemical Reactions

### References and Notes

Study pages 42 - 43. Then answer questions 4.12 - 4.14



Study pages 64 and 65 paying close attention to Figures 4.3A and 4.3B. Then, launch the **Acid Deposition** lesson on your computer and follow the instructions to work your way through it. Complete the third assignment for the course

**Note:** You will not be tested on the material covered in the assignment.

**Note:** This is the end of Unit 4. You should check with your instructor to see if there is review work or any other additional work for this unit.

**Note:** You have now reached the end of the course and you will be expected to write a final exam. Discuss with your instructor what you should study for the exam.

### Work to Submit

#### Writing:

- 4.12 What do word equations show?
- 4.13 Write the general format of a word equation with two reactants and two products.
- 4.14 Complete question #1 in *Check Your Understanding* on page 43.

#### Assignment III:

- 4.15 Print out the **Summary** and the **Certificate of Completion** with your name on them. Pass them to your instructor.

# **Appendix**



## Sample WHMIS Label

# ACETONE

# ACÉTONE

SEE MATERIAL SAFETY DATA SHEET FOR THIS PRODUCT  
VOIR LA FICHE SIGNALÉTIQUE POUR CE PRODUIT

**DANGER! EXTREMELY  
FLAMMABLE. IRRITATES EYES.**

**PRECAUTIONS:** Keep away from heat, sparks, and flames. Ground containers when pouring. Avoid breathing vapours or mists. Avoid eye contact. Avoid prolonged or repeated contact with skin. Wear splash-proof safety goggles or faceshield and butyl rubber gloves. If acetone is present in concentrations greater than 250 ppm, wear a NIOSH-approved respirator with an organic vapour cartridge. Use with adequate ventilation, especially in enclosed areas. Store in a cool, well-ventilated area, away from incompatibles.

**FIRST AID:** In case of contact with eyes, immediately flush eyes with lots of running water for 15 minutes, lifting the upper and lower eyelids occasionally. Get medical attention immediately. In case of contact with skin, immediately wash skin with lots of soap and water. Remove contaminated clothing and shoes. Get medical attention if irritation persists after washing. Wash clothing before reuse. If inhaled, remove subject to fresh air. Give artificial respiration if not breathing. Get medical attention immediately. If swallowed, contact the Poison Control Centre. Get medical attention immediately. Do not give anything by mouth to an unconscious or convulsing person.



**ATTENTION! THIS CONTAINER IS  
HAZARDOUS WHEN EMPTY. ALL  
LABELLED HAZARD PRECAUTIONS  
MUST BE OBSERVED.**

**DANGER! EXTRÊMEMENT  
INFLAMMABLE. IRRITE LES YEUX.**

**MESURES DE PRÉVENTION:** Tenir à l'écart de la chaleur, des étincelles et des flammes. Relier les récipients à la terre lors du transvasement. Éviter de respirer les vapeurs ou les brumes. Éviter le contact avec les yeux. Éviter le contact prolongé ou répété avec la peau. Porter des lunettes contre les éclaboussures de produit chimique ou une visière de protection, et des gants en caoutchouc butyle. Si l'acétone est présent en concentration de plus de 250 pour un million, porter un respirateur muni d'une cartouche à vapeur organique approuvé par NIOSH. Utiliser avec suffisamment de ventilation surtout dans les endroits clos. Entreposer dans un endroit frais, bien aéré, à l'écart des produits incompatibles.

**PREMIERS SOINS:** En cas de contact avec les yeux, rincer immédiatement et copieusement avec de l'eau courante pendant 15 minutes en soulevant les paupières intérieures et supérieures de temps en temps. Obtenir des soins médicaux immédiatement. En cas de contact avec la peau, laver immédiatement la région affectée avec beaucoup d'eau et de savon. Retirer les vêtements et les chaussures contaminées. Si l'irritation persiste après le lavage, obtenir des soins médicaux. Laver les vêtements avant de les réutiliser. En cas d'inhalation, transporter la victime à l'air frais. En cas d'arrêt respiratoire, pratiquer la respiration artificielle. Obtenir des soins médicaux immédiatement. En cas d'ingestion, contacter le Centre de Contrôle des Empoisonnements. Obtenir des soins médicaux immédiatement. Ne rien faire avaler à une victime inconsciente ou en convulsions.

**ATTENTION! CE RECIPIENT EST  
DANGEREUX LORSQU'IL EST VIDE.  
CHAQUE INDICATION DE DANGER  
SUR LES ÉTIQUETTES DOIVENT  
ÊTRE OBSERVÉES.**



**BIG**

**BIG Chemical Company / 123 Nitro Avenue, Vapour Town, BC / 123-4567**



# Sample MSDS

## MATERIAL SAFETY DATA SHEET — 9 Sections

### SECTION 1 — PRODUCT INFORMATION

Product Identifier <b>Acetone</b>		WHMIS Classification (optional) <b>B2, D2B</b>	
Product Use <b>Solvent, general-purpose cleaning of adhesives, contact cements, printing inks, gums, waxes, resins, greases, and oils</b>			
Manufacturer's Name <b>Happy Chemical Company</b>		Supplier's Name <b>Big Chemical Company</b>	
Street Address <b>5556 Helium Lane</b>		Street Address <b>123 Nitro Avenue</b>	
City <b>Gaseous Bay</b>	Province <b>BC</b>	City <b>Vapour Town</b>	Province <b>BC</b>
Postal Code <b>X0X 0X0</b>	Emergency Telephone <b>(604) 234-5678</b>	Postal Code <b>X5X 5X5</b>	Emergency Telephone <b>(604) 345-6789</b>

### SECTION 2 — HAZARDOUS INGREDIENTS

Hazardous Ingredients (specific)	%	CAS Number	LD <sub>50</sub> of Ingredient (specify species and route)	LC <sub>50</sub> of Ingredient (specify species)
Acetone	99-100	67-64-1	5,800 mg/kg (oral, rat)	30,000 ppm (inhal., 4 hrs.)

### SECTION 3 — PHYSICAL DATA

Physical State <b>Liquid</b>	Odour and Appearance <b>Clear, colourless liquid with mildly pungent, sweet, and fruity odour</b>	Odour Threshold (ppm) <b>62 (average)</b>
Specific Gravity <b>0.791 at 20° C</b>	Vapour Density (air = 1) <b>2.0</b>	Evaporation Rate <b>5.6 (n-butyl acetate=1)</b>
Boiling Point (°C) <b>56.2</b>	Vapour Pressure (mmHg) <b>24-24.7</b>	Freezing Point (°C) <b>-94.6</b>
	pH <b>n/ap</b>	Coefficient of Water/Oil Distribution <b>0.58</b>

### SECTION 4 — FIRE AND EXPLOSION DATA

Flammability <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, under which conditions? <b>Flammable liquid</b>		
Means of Extinction <b>Carbon dioxide, dry chemical powder, "alcohol" foam, polymer foam. Water may be ineffective because it will not cool acetone below its flashpoint.</b>			
Flashpoint (°C) and Method <b>-18°C (cc)</b>	Upper Flammable Limit (% by volume) <b>12.8% at 25°C</b>	Lower Flammable Limit (% by volume) <b>2.5% at 25°C</b>	
Autoignition Temperature (°C) <b>465°C</b>	Explosion Data — Sensitivity to Impact <b>No</b>	Explosion Data — Sensitivity to Static Discharge <b>Yes</b>	
Hazardous Combustion Products <b>Carbon monoxide and carbon dioxide</b>			

### SECTION 5 — REACTIVITY DATA

Chemical Stability <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If no, under which conditions?		
Incompatibility with Other Substances <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes, which ones? <b>Acids (for example, nitric acid); Strong oxidizing agents (for example, hydrogen peroxide); Bases (for example, sodium hydroxide)</b>		
Reactivity, and under what conditions? <b>Attacks many forms of plastics and rubber, including rayon</b>			
Hazardous Decomposition Products <b>Carbon monoxide from prolonged exposure to sunlight</b>			

**Product Identifier** Acetone

**SECTION 6 – TOXICOLOGICAL PROPERTIES**

Route of Entry <input checked="" type="checkbox"/> Skin Contact <input type="checkbox"/> Skin Absorption <input checked="" type="checkbox"/> Eye Contact <input checked="" type="checkbox"/> Inhalation <input checked="" type="checkbox"/> Ingestion	
Effects of Acute Exposure to Product Irritation; possible effects on central nervous system (CNS); at air concentrations above 8,000 ppm may cause drowsiness, incoordination, loss of reflexes, unconsciousness, and respiratory failure	
Effects of Chronic Exposure to Product Dermatitis. No significant harmful effects from oral or inhalation exposures.	
Exposure Limits (value, source, date) 250 ppm, 8-hour exposure limit (WCB)	Irritancy (if yes, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Severe eye irritant, skin and respiratory irritant Carcinogenicity (if yes, explain) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Teratogenicity (if yes, explain) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Synergistic Products (if yes, explain) <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Chlorinated solvents, ethyl alcohol
Sensitization (if yes, explain) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Reproductive Toxicity (if yes, explain) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Mutagenicity (if yes, explain) <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	

**SECTION 7 – PREVENTIVE MEASURES**

Personal Protective Equipment <input checked="" type="checkbox"/> Gloves <input checked="" type="checkbox"/> Respirator <input checked="" type="checkbox"/> Eye <input type="checkbox"/> Footwear <input type="checkbox"/> Clothing <input type="checkbox"/> Other
If checked, specify type Butyl rubber gloves. NIOSH-approved respirator with organic vapour cartridge for air concentrations up to 2,500 ppm. Splash-proof chemical safety goggles or face shield.
Engineering Controls (specify, such as ventilation, enclosed process) Use mechanical ventilation to reduce exposure. Use non-sparking and grounded ventilation system.
Leak and Spill Procedure Eliminate all ignition sources. Wear adequate protective equipment. Contain spill with absorbent material and place in a suitable covered and labelled container for disposal.
Waste Disposal Check with federal, provincial, and local government requirements for disposal.
Handling Procedures and Equipment Use in a well-ventilated area, away from heat and all ignition sources (including sparks, open flames, and hot surfaces). Do not use with incompatible substances. Use grounded and non-sparking equipment.
Storage Requirements Store in cool, well-ventilated area out of direct sunlight, away from heat and ignition sources. Storage facilities should be made from fire-resistant materials.
Special Shipping Information TDG shipping name: Acetone, Classification 3, Flammable liquid, Packing Group II <span style="float: right;">PIN 1090</span>

**SECTION 8 – FIRST AID MEASURES**

Inhalation Remove source of contamination or move victim to fresh air.
Ingestion If conscious, have victim rinse mouth thoroughly with water; do not induce vomiting; have victim drink 240-300 mL of water. Obtain medical attention immediately.
Skin Contact Flush with water for 15 minutes.
Eye Contact Immediately flush contaminated eye(s) with lukewarm, gently flowing water for 20 minutes, while holding eyelids(s) open. Obtain medical attention immediately.

**SECTION 9 – PREPARATION INFORMATION**

Prepared by (Group, Department, etc.) Sally Safemeister	Telephone Number (604) 123-2222	Preparation Date January 4, 1999
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