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## MSDS: Material Safety Data Sheet

### Chemistry 102 LabPaqs

This list includes all the chemicals used in the Chemistry 102 produced by HOL. Only some of these chemicals are in each LabPaq.

Effective Date 08-15-2007

**SAFETY** – This Material Safety Data Sheet (MSDS) is designed to provide chemical, physical, health, and safety information on reagents and supplies used by HOL. While all experiments in HOL LabPaqs are micro-scale or small-scale, which reduces most potential risks, unforeseen risks may still exist. The need to prevent injuries and accidents cannot be over-emphasized! No chemicals should be mixed or used other than as directed in the Lab Manual which accompanies the LabPaq. Make sure to store the LabPaq out of the reach of children and pets. Thoroughly read and review the Basic Safety information in your Lab Manual, the MSDS information, and sign the Safety Contract. Make sure to wear the proper protective equipment and clothing.

## HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

### Hazard: Toxic/Oxidizer, Nitrates & Poisons

<u>COMPOSITION</u>	<u>CAS NUMBER</u>	<u>PEL/TLV</u>	<u>% by Volume</u>	<u>HAZARD</u>
Gram stain iodine	N/A	N/A	N/A	Toxic
Potassium Iodide	7681-11-0	N/A	13	Irritant
PVP-Iodine	25655-41-8	N/A	2	Toxic
Sodium hypochlorite, 1%, Bleach	7681-52-9	N/A	1.0	Harmful

### Hazard: Slight or Minimal, Miscellaneous

<u>COMPOSITION</u>	<u>CAS NUMBER</u>	<u>PEL/TLV</u>	<u>% by Volume</u>	<u>HAZARD</u>
$\alpha$ -Amylase	9000-92-4	N/A	N/A	Non-Hazardous
Aspirin	50-78-2	N/A	100	Irritant
Blue dye #-1	3844-45-9	N/A	<1	Irritant
Blue dye #-2	860-22-0	N/A	<1	Irritant
Ferrous sulfate, Iron (II) sulfate	7782-63-0	N/A	100	Irritant
Red dye #-3	16423-68-0	N/A	<1	Irritant
Red dye #40	25956-17-6	N/A	<1	Irritant
Sodium carbonate	497-19-8	N/A	100	Irritant
Starch, 1% with 0.02% Thimerosal	9005-84-9 54-64-8	N/A N/A	N/A <1	Irritant Toxic
Yellow dye #-5	1934-21-0	N/A	<1	Irritant
Yellow dye #-6,	2783-94-0	N/A	<1	Irritant
Tetracosane	646-31-1	N/A	100	Irritant
1-Tetradecanol	112.72-1	N/A	100	Irritant
Unknown dye	N/A	N/A	N/A	Irritant
White vinegar	N/A	N/A	NA	irritant

## EMERGENCY OVERVIEW

### Hazard: Toxic/Oxidizer, Nitrates & Poisons

**WARNING! VERY HAZARDOUS IF SWALLOWED. MAY CAUSE MODERATE TO SEVERE IRRITATION TO EYES AND/OR BURNS RESULTING IN CORNEAL INJURY. HARMFUL IF INHALED. CAN CAUSE IRRITATION AND OR BURNS TO SKIN, EYES AND RESPIRATORY TRACT.**

**OXIDIZERS: CONTACT WITH OTHER MATERIAL MAY CAUSE A FIRE.**

**POISONS: VERY HAZARDOUS IF SWALLOWED.**

**Potassium chromate and Acetamide: CANCER HAZARD. CAN CAUSE CANCER.** Risk of cancer depends on duration and level of exposure. Known to be a human carcinogen.

**SAFETY RATINGS:** Health: 3, Severe (Poison)      Reactivity: 0, None  
Flammability: 0, None      Contact: 2, Moderate

**Protective Equipment:** Goggles, Lab Coat or Apron and Gloves.

### Hazard: Slight or Minimal, Miscellaneous

**WARNING! MAY CAUSE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT. MAY BE HARMFUL IF SWALLOWED OR INHALED.**

**SAFETY RATINGS:** Health: 1, Slight      Reactivity: 1, None  
Flammability: 0, None      Contact: 1, Slight

**Protective Equipment:** Safety Glasses, Lab Coat or Apron, Gloves.

<b>POTENTIAL HEALTH EFFECTS</b>
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**Hazard: Toxic/Oxidizer, Nitrates & Poisons****INHALATION:**

Effects are expected to be less severe than for exposure to higher concentrations where symptoms include severe irritation to the respiratory tract with coughing, wheezing, shortness of breath, nausea and vomiting. May be absorbed into the body following inhalation, with symptoms paralleling those of ingestion exposure.

**INGESTION:**

Effects are expected to be less severe than for exposure to higher concentrations where symptoms include pain and burning in the mouth, blackening of the skin and mucous membranes, throat, abdomen, diarrhea and shock. Poison in higher concentrations.

**SKIN CONTACT:**

Effects are expected to be less severe than for exposure to higher concentrations where symptoms include redness, pain, irritation and burns.

**EYE CONTACT:**

Effects are expected to be less severe than for exposure to higher concentrations where symptoms include redness, pain, irritation, blurred vision and eye burns with possibility of permanent eye damage.

**CHRONIC EXPOSURE:**

Prolonged or repeated exposure may cause symptoms that parallel those described above for inhalation, ingestion, skin contact and eye contact.

**AGGRAVATION of PRE-EXISTING CONDITIONS:**

Persons with pre-existing skin disorders, eye problems, allergies or known sensitization may be more susceptible to the effects of the substances

<u>NTPP CARCINOGEN</u>			
<u>KNOWN</u>	<u>ANTICIPATED</u>	<u>IARC CATAGORY</u>	<u>OSHA REGULATED</u>
N/A	N/A	N/A	YES

**Hazard: Slight or Minimal, Miscellaneous****INHALATION:**

May be harmful. May cause irritation to nasal membranes and respiratory tract.

**INGESTION:**

May be harmful. May cause nausea, vomiting, headache and diarrhea.

**SKIN CONTACT:**

May cause irritation.

**EYE CONTACT:**

May cause irritation.

**POTENTIAL CHRONIC HEALTH EFFECTS:**

Prolonged or repeated exposure may cause symptoms that parallel those described above for inhalation, ingestion, skin contact and eye contact.

**MEDICAL CONDITIONS GENERALLY AGGRAVATED by EXPOSURE:**

Persons with pre-existing skin disorders, eye problems, allergies or known sensitization may be more susceptible to the effects of the substances

<u>NTP CARCINOGEN</u>			
<u>KNOWN</u>	<u>ANTICIPATED</u>	<u>IARC CATAGORY</u>	<u>OSHA REGULATED</u>
N/A	N/A	N/A	YES

<b>FIRST AID MEASURES</b>
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**Hazard: Toxic/Oxidizer, Nitrates & Poisons****INHALATION:**

Remove to fresh air. If not breathing, give artificial respiration. Call a physician immediately.

**INGESTION:**

DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a physician immediately.

**SKIN CONTACT:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician for medical advice.

**EYE CONTACT:**

Check for and remove contact lens. Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

**Hazard: Slight or Minimal, Miscellaneous**

**INHALATION:**

Remove to fresh air if effects occur.

**INGESTION:**

DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Call a physician for medical advice.

**SKIN CONTACT:**

Wash with mild soap and water. Get medical advice if irritation develops.

**EYE CONTACT:**

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical advice if irritation develops.

**FIRE FIGHTING MEASURES**

**FIRE:**

Flash Point: N/A Flammable Limits: N/A LEL: N/A UEL: N/A

**EXPLOSION:**

N/A - Use any means suitable for extinguishing surrounding fire.

**SPECIAL INFORMATION:**

N/A

**NFPA RATINGS:** Health: 2 Flammability: 0 Reactivity: 0

**NOTE:** The contents of this LabPaq should not be a factor in a fire due to the extremely small quantities.

**HANDLING AND STORAGE**

Store in a cool, dry, ventilated area away from flame, sources of ignition and heat. Keep containers tightly closed and upright. Protect from physical damage. Keep out of direct sunlight and separate from incompatible materials. Storage and use areas should be non-smoking. Dispose of waste materials or spills as directed in the Lab Manual.

**PERSONAL PROTECTION**

**VENTILATION SYSTEM:**

A system of local and/or general exhaust is recommended to keep exposures below the Airborne Exposure Limits.

**PERSONAL RESPIRATORS (NIOSH) APPROVED:**

N/A

**SKIN PROTECTION:**

Wear protective clothing, gloves, lab coat or apron, as appropriate, to prevent skin contact.

**EYE PROTECTION:**

Use chemical safety glasses or goggles.

**PHYSICAL AND CHEMICAL PROPERTIES**

<b>APPEARANCE:</b>	N/A
<b>ODOR:</b>	N/A
<b>SOLUBILITY:</b>	N/A
<b>SPECIFIC GRAVITY:</b>	N/A
<b>pH:</b>	N/A
<b>% VOLATILES by VOLUME:</b>	N/A
<b>BOILING POINT:</b>	N/A
<b>MELTING POINT:</b>	N/A
<b>VAPOR DENSITY (Air =1):</b>	N/A
<b>VAPOR PRESSURE (mm Hg):</b>	N/A
<b>EVAPORATION RATE (BuAc=1):</b>	N/A

## STABILITY AND REACTIVITY

**STABILITY:**

Stable under ordinary conditions of use and storage

**HAZARDOUS DECOMPOSITION PRODUCTS:**

N/A

**HAZARDOUS POLYMERIZATION:**

N/A

**INCOMPATIBILITIES:**

No chemicals should be mixed or used other than as directed in the Lab Manual which accompanies the LabPaq.

**CONDITIONS to AVOID:**

Heat, flames, ignition sources and incompatibles

## OTHER INFORMATION

**TRANSPORT (Land, DOT):**

Small Quantity Exception. Complies with 49 CFR 173.4 and IATA 2.7

**PRODUCT USE:**

Laboratory Reagent

Hands-On Labs, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. HANDS-ON LABS, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS, ACCORDINGLY, HANDS-ON LABS, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.