

# Safety Data Sheet

## Kovac Solution

**CAROLINA**<sup>®</sup>  
www.carolina.com

### Section 1 Product Description

**Product Name:** Kovac Solution  
**Recommended Use:** Science education applications  
**Synonyms:** Kovac's Reagent  
**Distributor:** Carolina Biological Supply Company  
2700 York Road, Burlington, NC 27215  
1-800-227-1150  
**Chemical Information:** 800-227-1150 (8am-5pm (ET) M-F)  
**Chemtrec:** 800-424-9300 (Transportation Spill Response 24 hours)

### Section 2 Hazard Identification

Classification of the chemical in accordance with paragraph (d) of §1910.1200;

**DANGER**



Flammable liquid and vapor. Harmful if swallowed. Causes severe skin burns and eye damage. Causes serious eye damage. May cause respiratory irritation. May cause drowsiness or dizziness.

**GHS Classification:**

Skin Corrosion/Irritation Category 1A, Serious Eye Damage/Eye Irritation Category 1, Flammable Liquid Category 3, Specific Target Organ Systemic Toxicity (STOT) - Single Exposure Category 3, Acute Toxicity - Oral Category 4

### Section 3 Composition / Information on Ingredients

<u>Chemical Name</u>	<u>CAS #</u>	<u>%</u>
1-Butanol	71-36-3	71
Water	7732-18-5	15.07
Hydrogen Chloride	7647-01-0	8.93
p-Dimethylaminobenzaldehyde	100-10-7	5

### Section 4 First Aid Measures

**Emergency and First Aid Procedures**

**Inhalation:** IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.  
**Eyes:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
**Skin Contact:** IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.  
**Ingestion:** IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. IF SWALLOWED: rinse mouth. Do NOT induce vomiting.

### Section 5 Firefighting Procedures

**Extinguishing Media:** Use dry chemical, CO2 or appropriate foam.  
**Fire Fighting Methods and Protection:** Firefighters should wear full protective equipment and NIOSH approved self-contained breathing apparatus.  
**Fire and/or Explosion Hazards:** Fire or excessive heat may produce hazardous decomposition products.  
**Hazardous Combustion Products:** Carbon dioxide, Carbon monoxide, Hydrogen chloride

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## Section 6

## Spill or Leak Procedures

### Steps to Take in Case Material Is Released or Spilled:

Exposure to the spilled material may be severely irritating or toxic. Follow personal protective equipment recommendations found in Section 8 of this SDS. Personal protective equipment needs must be evaluated based on information provided on this sheet and the special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred, and the expertise of employees in the area responding to the spill. Never exceed any occupational exposure limits.

Prevent the spread of any spill to minimize harm to human health and the environment if safe to do so. Wear complete and proper personal protective equipment following the recommendation of Section 8 at a minimum. Dike with suitable absorbent material like granulated clay. Gather and store in a sealed container pending a waste disposal evaluation. Shut off ignition sources; including electrical equipment and flames. Do not allow smoking in the area. If this material is released into a work area, evacuate the area immediately.

## Section 7

## Handling and Storage

**Handling:** Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Keep container tightly closed. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/.../ equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Do not breathe dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Avoid direct sunlight and heat.

**Storage:** Store in a well-ventilated place. Keep container tightly closed. Store locked up. Keep Refrigerated.

**Storage Code:** Red - Flammables. Store in approved flammable containers. Store away from oxidizing materials.

## Section 8

## Protection Information

<u>Chemical Name</u>	<u>ACGIH</u>		<u>OSHA PEL</u>	
	<u>(TWA)</u>	<u>(STEL)</u>	<u>(TWA)</u>	<u>(STEL)</u>
1-Butanol	20 ppm TWA	N/A	100 ppm TWA; 300 mg/m <sup>3</sup> TWA	N/A
Hydrogen Chloride	N/A	2 ppm (Ceiling)	N/A	5 ppm (Ceiling)
p-Dimethylaminobenzaldehyde	N/A	N/A	N/A	N/A

### Control Parameters

#### Engineering Measures:

Local exhaust ventilation, process enclosures, or other engineering controls are necessary when handling or using this product to avoid overexposure.

#### Personal Protective Equipment (PPE):

Lab coat, apron, eye wash, safety shower.

#### Respiratory Protection:

Respiratory protection may be required to avoid overexposure when handling this product. General or local exhaust ventilation is the preferred means of protection. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with organic vapor/acid gas cartridge.

#### Respirator Type(s):

Wear chemical splash goggles when handling this product. Have an eye wash station available.

#### Eye Protection:

#### Skin Protection:

Avoid skin contact by wearing chemically resistant gloves, an apron and other protective equipment depending upon conditions of use. Inspect gloves for chemical break-through and replace at regular intervals. Clean protective equipment regularly. Wash hands and other exposed areas with mild soap and water before eating, drinking, and when leaving work.

#### Gloves:

Nitrile, Natural rubber, Neoprene, Butyl rubber

## Section 9

## Physical Data

**Formula:** See section 3

**Molecular Weight:** No data available

**Appearance:** Yellow Colorless Liquid

**Odor:** Moderate Strong Sweet Rancid

**Odor Threshold:** No data available

**pH:** No data available

**Melting Point:** No data available -90 C

**Boiling Point:** No data available

**Flash Point:** Estimated > 37 C

**Flammable Limits in Air:** 1-Butanol: 1.4 - 11.2

**Vapor Pressure:** No data available

**Evaporation Rate (BuAc=1):** No data available

**Vapor Density (Air=1):** No data available

**Specific Gravity:** No data available

**Solubility in Water:** Slightly Soluble

**Log Pow (calculated):** No data available

**Autoignition Temperature:** No data available

**Decomposition Temperature:** No data available

**Viscosity:** No data available

**Percent Volatile by Volume:** 87%

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## Section 10

## Reactivity Data

<b>Reactivity:</b>	Mildly reactive - See below
<b>Chemical Stability:</b>	Stable under normal conditions.
<b>Conditions to Avoid:</b>	Temperatures above the high flash point of this combustible material in combination with sparks, open flames, or other sources of ignition. Reaction with water is exothermic. Exposure to light.
<b>Incompatible Materials:</b>	Strong oxidizing agents, Alkali and Alkaline Metals, Halogens, Mineral acids, Water-reactive materials, Water, Caustics (bases), Oxidizing materials, Acetic anhydride, Amines, Alkanolamines, Isocyanates, Copper, Metals
<b>Hazardous Decomposition Products:</b>	Hydrogen chloride, Carbon dioxide, Carbon monoxide
<b>Hazardous Polymerization:</b>	Will not occur

## Section 11

## Toxicity Data

**Routes of Entry** Inhalation, ingestion, eye or skin contact.  
**Symptoms (Acute):** Central Nervous System Disorders, Headache, Gastrointestinal,, Respiratory Irritation, Anesthetic properties

**Delayed Effects:** No data available

**Acute Toxicity:**

Chemical Name	CAS Number	Oral LD50	Dermal LD50	Inhalation LC50
1-Butanol	71-36-3	Oral LD50 Rat 790 mg/kg		INHALATION LC50 Rat 8000 ppm
Water	7732-18-5	Oral LD50 Rat 90000 mg/kg		
Hydrogen Chloride	7647-01-0	Oral LD50 Rabbit 900 mg/kg		INHALATION LC50 Rat 3700 ppm INHALATION LC50 Mouse 1108 ppm INHALATION LC50 Rat 45000 MG/M3 INHALATION LC50 Rat 8300 MG/M3
p-Dimethylaminobenzaldehyde	100-10-7	Oral LD50 Mouse 800 mg/kg		

**Carcinogenicity:**

Chemical Name	CAS Number	IARC	NTP	OSHA
Hydrogen Chloride	7647-01-0	Not listed	Not listed	Not listed
p-Dimethylaminobenzaldehyde	100-10-7	Not listed	Not listed	Not listed

**Chronic Effects:**

<b>Mutagenicity:</b>	No evidence of a mutagenic effect.
<b>Teratogenicity:</b>	No evidence of a teratogenic effect (birth defect).
<b>Sensitization:</b>	No evidence of a sensitization effect.
<b>Reproductive:</b>	No evidence of negative reproductive effects.
<b>Target Organ Effects:</b>	
<b>Acute:</b>	Central Nervous System, Kidneys, Liver
<b>Chronic:</b>	No data available

## Section 12

## Ecological Data

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**Overview:** Slight ecological hazard. In high concentrations, this product may be dangerous to plants and/or wildlife.  
**Mobility:** This material is expected to have moderate mobility in soil. It absorbs to most soil types.  
**Persistence:** Evaporation into atmosphere, Evaporation into atmosphere, dissolved in water.  
**Bioaccumulation:** No data  
**Degradability:** No data  
**Other Adverse Effects:** No data

Chemical Name	CAS Number	Eco Toxicity
1-Butanol	71-36-3	96 HR LC50 PIMEPHALES PROMELAS 1910000 µG/L [STATIC] 48 HR EC50 DAPHNIA MAGNA 1983 MG/L 72 HR EC50 DESMODESMUS SUBSPICATUS > 500 MG/L 96 HR EC50 DESMODESMUS SUBSPICATUS > 500 MG/L
Water	7732-18-5	No data available
Hydrogen Chloride	7647-01-0	96 HR LC50 GAMBUSIA AFFINIS 282 MG/L [STATIC]
p-Dimethylaminobenzaldehyde	100-10-7	

## Section 13 Disposal Information

**Disposal Methods:** Dispose in accordance with all applicable Federal, State and Local regulations. Always contact a permitted waste disposer (TSD) to assure compliance.  
**Waste Disposal Code(s):** If discarded, this product is considered a RCRA ignitable waste, D001.  
If discarded, this product is considered a RCRA corrosive waste, D002.

## Section 14 Transport Information

Ground - DOT Proper Shipping Name:	Air - IATA Proper Shipping Name:
UN2924 Flammable Liquids, corrosive, N.O.S. (1-Butanol, Hydrochloric Acid) Class 3 P.G. II	UN2924 Flammable Liquids, corrosive, N.O.S. (1-Butanol, Hydrochloric Acid) Class 3 P.G. II

## Section 15 Regulatory Information

**TSCA Status:** All components in this product are on the TSCA Inventory.

Chemical Name	CAS Number	§ 313 Name	§ 304 RQ	CERCLA RQ	§ 302 TPQ	CAA 112(2) TQ
1-Butanol	71-36-3	n-Butyl alcohol	No	5000 lb final RQ; 2270 kg final RQ	No	No
Hydrogen Chloride	7647-01-0	No	No	No	No	No
p-Dimethylaminobenzaldehyde	100-10-7	No	No	No	No	No

## Section 16 Additional Information

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Replaces: 09/09/2015

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The information provided in this (Material) Safety Data Sheet represents a compilation of data drawn directly from various sources available to us. Carolina Biological Supply makes no representation or guarantee as to the suitability of this information to a particular application of the substance covered in the (Material) Safety Data Sheet.

### Glossary

# Safety Data Sheet

ACGIH	American Conference of Governmental Industrial Hygienists	NTP	National Toxicology Program
CAS	Chemical Abstract Service Number	OSHA	Occupational Safety and Health Administration
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act	PEL	Permissible Exposure Limit
DOT	U.S. Department of Transportation	ppm	Parts per million
IARC	International Agency for Research on Cancer	RCRA	Resource Conservation and Recovery Act
N/A	Not Available	SARA	Superfund Amendments and Reauthorization Act
		TLV	Threshold Limit Value
		TSCA	Toxic Substances Control Act
		IDLH	Immediately dangerous to life and health