MATERIAL SAFETY DATA SHEET

Section 1. Company Identification and Product Information			
Product Name or Identity:	**Kovacs Reagent KO-122**		
Manufacturer's Name:	Neogen Corporation	**Emergency Phone No.:**	517/372-9200
	620 Lesher Place	**Fax No.:**	517/372-0108
	Lansing, MI 48912	**e-mail:**	foodsafety@neogen.com
Date Prepared or Revised: April 2015			

Section 2. Composition / Information on Ingredients				
Hazardous Components Specific Chemical Identity:	**CAS-No.**	**%**	**EG-Number**	**Hazard Symbol**
p-Dimethylaminobenzaldehyde	100-10-7	5.0%	N/A	F - Xi
Isoamyl Alcohol	123-51-3	71.0%	N/A	Xn
Hydrochloric Acid	7647-01-0	24.0%	N/A	C

Section 3. Health Hazard Identification	
Health Hazards: *(Acute and Chronic)*	**Information pertaining to particular dangers for man and environment.** R: 10, 22, 34, 37/38, 41, 67, Flammable. Harmful if swallowed. May cause burns. Irritating to respiratory system and skin. Risk of serious damage to eyes.
Signs and Symptoms of Exposure: May be harmful if absorbed through the skin, causes burns. Material is extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes, and skin. Symptoms may include a burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.	
Medical Conditions Generally Aggravated by Exposure: Chronic exposure can result in chemical pneumonitis, pulmonary edema, central nervous system depression and gastrointestinal disturbances.	

Section 4. First Aid Measures	
Emergency / First Aid Procedures:	General Information: Immediately remove contaminated clothing. Show physician product label.
	Ingestion: If swallowed, wash mouth out with water provided person is conscious. Seek medical attention immediately. DO NOT INDUCE VOMITING.
	Inhalation: If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient on side position for transportation. Seek medical attention.
	Eye Contact: Rinse opened eye for at least 15 minutes under running water, lifting lower and upper eyelids occasionally. Seek medical attention.
	Skin Contact: Remove contaminated clothing immediately. Wash with plenty of soap and water for at least 15 minutes. Seek medical attention. Wash clothing before reuse.

Section 5. Fire and Explosion Hazard Data		
Flash Point (Method Used): 24°C	**Flammable Limits**: LEL: N/A	UEL: (Upper Explosive Limit): N/A
Extinguishing Media: Use alcohol foam, dry chemical, or carbon dioxide. Do not use water jet as an extinguisher, as this may spread the fire.		
Special Fire Fighting Procedures: Water spray should be used to cool containers. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks, or flames. Sensitive to static discharge.		
Unusual Fire and Explosion Hazards: During heating or in case of fire, poisonous gases are produced. May travel considerable distance to source of ignition.		

Section 6. Accidental Release Measures
Personal Precautions: Shut off all sources of ignition, ventilate area. Wear suitable protective clothing.
Environmental Precautions: Prevent dispersion of material. Do not allow to enter drains or water courses.

Clean-up Methods: Contact safety officer and ventilate area. Absorb spill with inert material, including dry-lime, sand, or soda ash, then place into a chemical waste container using non-sparking tools. Wash spill site.

Section 7. Handling and Storage

Handling: Ensure good ventilation / exhaustion and do not breathe vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure. Do not use if skin is cut or scratched.

Storage: Keep container tightly closed. Keep away from heat, sparks, and open flame. Store at 2 - 8°C.

Section 8. Exposure Controls / Personal Protection

OES – PEL: 300 mg/m^3, 100 ppm (Isoamyl Alcohol) Short term value: C 7 mg/m3 (Hydrochloric acid)	**ACGIH TLV:** 152 mg/m3, 50 ppm (Isoamyl Alcohol) Short term value: C2.98 mg/m3 (Hydrochloric acid)

Engineering Measures: In the event of use above flash point, use in closed systems. Use non-sparking tools. Proper ventilation, safety shower, and eye bath required. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Respiratory Protection (Specify Type)**:** With sufficient ventilation, breathing apparatus is not necessary. In the event of possible spill / exposure use dusk mask to (US) N100 or EN 14387.

Ventilation:	Local Exhaust: 50 – 100 CFM	Special: N/A
	Mechanical (General): N/A	Other: N/A
Protective Gloves: Compatible chemical-resistant gloves.		Eye Protection: Safety glasses or chemical goggles to EN 166, 167, and 168

Other Protective Clothing or Equipment: Uniform, lab coat, or disposable lab wear.

Work / Hygienic Practices: Follow the usual precautionary measure for handling chemicals / powder. Keep away from food and beverages. Immediately remove all soiled and contaminated clothing. Avoid contact with eyes, skin, and clothing.

Section 9. Physical and Chemical Properties

Boiling Point: 85°C (Kovacs Reagent)	**Specific Gravity:** 0.92 g/cm^3 (Kovacs Reagent)
Vapor Pressure (mm Hg.): N/A	**Melting Point:** N/A
Vapor Density (AIR = 1): 2.31 (Kovacs Reagent)	**Solubility in Water:** N/A

Appearance and Odor: Clear liquid, light-yellow with characteristic aromatic odor (Kovacs Reagent).

Section 10. Stability and Reactivity

Stability:	Unstable		
	Stable	X	Conditions to Avoid: Avoid exposure to moisture.

Incompatibility *(Materials to Avoid)***:** Incompatible with strong oxidizing agents and bases

Hazardous Decomposition or Byproducts: Carbon dioxide (CO_2), Carbon monoxide (CO), Nitrogen oxides, and Hydrogen chloride gas.

Hazardous Polymerization:	May Occur		
	Will Not Occur	X	Conditions to Avoid: Moisture and incompatible materials.

Section 11. Toxicological Information

LD_{50}: ORL-MSE - 800 mg/kg (p-Dimethylamiinobenzaldehyde) **LD_{50}:** ORL-RAT - 1,800 mg/kg (Isoamyl alcohol)	**LD_{50}:** ORLRBT - 900 mg/kg (Hydrochloric Acid)

Section 12. Ecological Information

Ecotoxicity Tests: The ecological effects have not been thoroughly investigated, but currently none have been identified. Water hazard class 2: Hazardous for water.

Section 13. Disposal Considerations

Waste Disposal Method: Dispose of material in accordance with federal (40CFR 261.3) state and local regulations.
RCRA hazardous waste - RCRA # D001 (ignitable)
RCRA hazardous waste - RCRA # D002 (corrosive).

Container Information: Do not remove labels from containers.

Section 14. Transport Information

DOT Regulations:
UN #: 1105
Class: 3
Packing Group: III
Label: Excepted Quantity

Land Transport ADR/RID/TDG (cross-border):
UN #: 1105
Class: 3Packing Group: III
Label: Excepted Quantity

Maritime Transport IMDG:
UN #: 1105
Class: 3
Packing Group: III
Label: Excepted Quantity

Air Transport ICAO-TI and IATA-DGR:
UN #: 1105
Class: 3
Packing Group: III
Label: Excepted Quantity
This product can be transported using the exception: Dangerous Goods in Excepted Quantities.

Section 15. Regulatory Information

Hazard Symbol(s):

p-Dimethylaminobenzaldehyde: F (Flammable), Xi (Irritant)

Isoamyl Alcohol: Xn (Harmful)

Hydrochloric Acid: C (Corrosive)

Risk Phrases:
R: 10, 22, 34, 37, 38, 41, Flammable. Harmful if swallowed. May cause burns. Irritating to respiratory system and skin. Risk of serious damage to eyes.

Safety Phrases:

S: 7, 16, 24, 25, 26, 36, 37, 38 Keep container tightly closed. Keep away from sources of ignition – no smoking. Avoid contact with skin and eyes. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice.

Section 16. Other Information

This document is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Neogen Corporation shall not be held liable for any damage resulting from handling or from contact with the above product. These suggestions should not be confused with state, municipal or insurance requirements, and constitute NO WARRANTY.