Section 1. Chemical Product and Company Identification

1.1. Product identification

Product name	KOVACS' indole reagent for microbiology
Catalog Number	iR95008
Synonyms	

1.2. Company identification

Company	Zist Kavosh Iranian, No.432, East Kokab Av,45 Metri Golshahr, Karaj, Iran.
Phone	0098 21 66787291 09391003565
Fax	0098 2633523460
e-mail	ibresco@gmail.com

Section 2. Hazards Identification

2.1. Classification of the substance or mixture

Health Hazards	Acute Tox. 4 - H302

2.2. GHS Labeling

Symbol	GHS07, GHS02, GHS05
Pictogram	
Signal Word	Danger
Hazard Statement	H226 Flammable liquid and vapour. H290 May be corrosive to metals H302 Harmful if swallowed. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage.H335 May cause respiratory irritation.H336 May cause drowsiness or dizziness. H412 Harmful to aquatic life with long lasting effects.
Precautionary Statement	P210 Keep away from heat. P273 Avoid release to the environment. P280 Wear protective gloves. P280 Wear eye protection. P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

2.3. Other Hazards	**No data available.**

Section 3. Composition/information on ingredients

3.1. Substance

Product name	Kovac's reagent for indoles
CAS number	100-10-7
EC number	
Chemical nature	Mixture of inorganic and organic compounds.

Section 4. Fire aid measures

4.1. Description of first aid measures

Inhalation	If wearing contact lenses, remove them. If breathing is irregular or stops, perform artificial respiration. Do not administer anything orally. If unconscious, place them in a suitable position and seek medical assistance.
Ingestion	If accidentally ingested, seek immediate medical attention. Keep calm. NEVER induce vomiting.
Skin contact	Remove contaminated clothing. Wash skin vigorously with water and soap or a suitable skin cleaner. NEVER use solvents or thinners.
Eye contact	If wearing contact lenses, remove them. Wash eyes with plenty of clean and cool water for at least 10 minutes while pulling eyelids up, and seek medical assistance.

Section 5. Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguisher powder or CO_2. In case of more serious fires, also alcohol-resistant foam and water spray. Do not use a direct stream of water to extinguish.

5.2. Special hazards arising from the substance

Combustible. As a result of thermal decomposition, dangerous products can form: Hydrogen chloride gas, nitrogen oxides. Vapours are heavier than air and may spread along floors. Forms explosive mixtures with air at elevated temperatures. Development of hazardous combustion gases or vapours possible in the event of fire.

5.3. Advice for firefighters

Use water to cool tanks, cisterns, or containers close to the heat source or fire. Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

Section 6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Wear protective clothing as described in Section 8 of this safety data sheet. No action shall be taken without appropriate training or involving any personal risk. Do not breathe vapours, aerosols. Provide adequate ventilation. Keep unnecessary and unprotected personnel away from the spillage.

Environmental precautions	Avoid discharge into drains or watercourses or onto the ground. Risk of explosion.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Wear protective clothing as described in Section 8 of this safety data sheet. Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions. For waste disposal, see Section 13.

6.4. Reference to other sections

For personal protection, see Section 8. See Section 11 for additional information on health hazards. See Section 12 for additional information on ecological hazards. For waste disposal, see Section 13.

Section 7. Handling and storage

7.1. Precautions for safe handling

Usage precautions	Wear protective clothing as described in Section 8 of this safety data sheet. Wash hands thoroughly after handling. Provide adequate ventilation. Work under hood. Avoid inhale substance/mixture. Avoid generation of vapours/aerosols. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions	Keep container tightly closed. Store in a cool and well-ventilated place. Store at refrigerator.

7.3. Specific end use(s)

Specific end use(s)	The identified uses for this product are detailed in Section 1.2.

Section 8. Exposure Controls/personal protection

8.1. Control parameters

Occupational exposure limits	Workplace Exposure Limits EH40.

8.2. Exposure controls

Appropriate engineering controls	Provide adequate ventilation. Observe any occupational exposure limits for the product or ingredients.
Eye/face protection	Unless the assessment indicates a higher degree of protection is required, the following protection should be worn: Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.
Hand protection	Wear protective gloves. To protect hands from chemicals, gloves should comply with European Standard EN374.
Other skin and body protection	Wear appropriate clothing to prevent repeated or prolonged skin contact.
Respiratory protection	Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. Particulate filters should comply with European Standard EN143. Full face mask respirators with replaceable filter cartridges should comply with European Standard EN136. Half mask and quarter mask respirators with replaceable filter cartridges should comply with European Standard EN140.

Environmental exposure controls	Avoid let product enter drains. Risk of explosion.

Section 9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	liquid
Colour	Yellow
Odour	Characteristic odour
Odour threshold	No data available.
pH	≤ 1.0 (20ºC)
Melting point	No data available.
Evaporation rate	No data available.
Inflammability (solid, gas)	No data available.
Lower Explosive Limit	No data available.
Upper Explosive Limit	No data available.
Vapour pressure	No data available.
Vapour density	No data available.
Relative density	No data available.
Solubility	Soluble
Liposolubility	No data available.
Decomposition temperature	No data available.
Explosive properties	No data available.
Oxidizing properties	No data available.

Section 10. Stability and reactivity

10.1. Reactivity

Reactivity	Vapour/air-mixtures are explosive at intense warming.

10.2. Chemical stability

Stability	Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Risk of explosion with: Alkali metals, conc. sulfuric acid Risk of ignition or formation of inflammable gases or vapours with: carbides, lithium silicide, Fluorine, Strong oxidizing agents, chromium(VI) oxide. Generates dangerous gases or fumes in contact with: Aluminium, hydrides, formaldehyde, Metals, strong alkalis, Sulphides. Exothermic reaction with: Amines, potassium permanganate, salts of oxyhalogenic acids, semimetallic oxides, semimetallic hydrogen compounds, Aldehydes, vinylmethyl ether, Alkaline earth metals, strong reducing agents, Acid chlorides.

10.4. Conditions to avoid

Conditions to avoid	Heating.

10.5. Incompatible materials

Materials to avoid	various metals, rubber, various plastics Metals.

10.6. Hazardous decomposition products	
Hazardous decomposition products	During fire, toxic gases (CO, CO_2) are formed.
Section 11. Toxicological information	
11.1. Information on toxicological effects	
11.1.1. Mixture	
Acute oral toxicity estimate	1.242 mg/kg
Symptoms	Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract., Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.
Acute inhalation toxicity	
Symptoms	mucosal irritations, Cough, Shortness of breath, Possible damages: damage of respiratory tract
Acute dermal toxicity	No data available.
Skin irritation	Mixture causes skin irritation.
Eye irritation	Mixture causes serious eye damage
Sensitization	Mixture may cause an allergic skin reaction.
Germ cell mutagenicity	No data available.
Carcinogenicity	No data available.
Reproductive toxicity	No data available.
Teratogenicity	No data available.
Specific target organ toxicity - single exposure	
Mixture may cause drowsiness or dizziness.	
Target Organs	Central nervous system
Mixture may cause drowsiness or dizziness	
Target Organs	Respiratory system.
Specific target organ toxicity - repeated exposure	No data available.
Aspiration hazard	No data available.
11.1.2.Component	
n-butanol	
Acute oral toxicity	LD50 Rat: 790 mg/kg, (RTECS)
Acute inhalation toxicity	LC50 Rat: > 18 mg/l; 4 h ; vapour, OECD Test Guideline 403, (highest concentration to be prepared)
Acute dermal toxicity	LD50 Rabbit: 3.430 mg/kg, OECD Test Guideline 402
Skin irritation	Rabbit, Result: Irritations, Draize Test

Eye irritation	Rabbit, Result: Irreversible effects on the eye, OECD Test Guideline 405
Repeated dose toxicity	Rat, male and female, Oral, 90 d, daily, NOAEL: 125 mg/kg, LOAEL: 500 mg/kg, OECD Test Guideline 408
Genotoxicity in vitro	Ames test, Salmonella typhimurium, Result: negative
Mutagenicity (mammal cell test): micronucleus.	Result: negative
In vitro mammalian cell gene mutation test	Result: negative, Method: OECD Test Guideline 476
Teratogenicity	Application Route: Oral, Rat, Number of exposures: daily
Hydrochloric Acid	
Skin irritation	Rabbit, Result: Corrosive, OECD Test Guideline 404
Eye irritation	Rabbit, Result: Irreversible effects on the eye, OECD Test Guideline 405
Sensitisation	Maximisation Test Guinea pig, Result: Does not cause skin sensitization, Method: OECD Test Guideline 406
Acute oral toxicity	LD50 Rat: > 2.000 mg/kg, OECD Test Guideline 423
Skin irritation	In vitro study, Result: negative, OECD Test Guideline 439
Eye irritation	In vitro study, Result: Eye irritation, OECD Test Guideline 492
In vitro study	Result: non-corrosive, OECD Test Guideline 437
Sensitisation	Local lymph node assay (LLNA) Mouse, Result: positive, Method: OECD Test Guideline 429
Genotoxicity in vitro	Ames test, Escherichia coli/Salmonella typhimurium, Result: negative, Method: OECD Test Guideline 471

Section 12. Ecological information

12.1.Mixture

Toxicity	No data available.
Persistence and degradability	No data available.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Results of PBT and vPvB assessment	Substance(s) in the mixture do(es) not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII, or a PBT/vPvB assessment was not conducted.

12.2.Components

n-butanol	
Toxicity to fish	static test LC50 Pimephales promelas (fathead minnow): 1.376 mg/l; 96 h, Analytical monitoring: yes, OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates	static test EC50 Daphnia magna (Water flea): 1.328 mg/l; 48 h, Analytical monitoring: yes, OECD Test Guideline 202
Toxicity to algae	static test EC50 Pseudokirchneriella subcapitata (green algae): 225 mg/l; 96 h, Analytical monitoring: yes, OECD Test Guideline 201
Toxicity to bacteria	Static test EC50 Pseudomonas putida: 4.390 mg/l; 17 h, DIN 38412 TEIL 8
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	Semi-static test NOEC Daphnia magna (Water flea): 4,1 mg/l; 21 d, Analytical monitoring: yes, OECD Test Guideline 211
Biodegradability	98 %; 28 d, OECD Test Guideline 301E, Readily biodegradable
Ratio BOD/ThBOD	BOD5 33 %,
Partition coefficient: n-octanol/water	log Pow: 1 (25 °C), OECD Test Guideline 117, Bioaccumulation is not expected.

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Hydrochloric Acid

Toxicity to fish	Lepomis macrochirus (Bluegill sunfish): 20,5 mg/l; 96 h, OECD Test Guideline 203
Toxicity to daphnia and other aquatic invertebrates	EC50: 1,3 mg/l; 48 h, OECD Test Guideline 202

Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

4-dimethylaminobenzaldehyde

Toxicity to fish	LC50 Pimephales promelas (fathead minnow): 45,7 mg/l; 96 h, (External MSDS)
Toxicity to daphnia and other aquatic invertebrates	semi-static test EC50 Daphnia magna (Water flea): 1,58 mg/l; 48 h,Analytical monitoring: yes, OECD Test Guideline 202
Toxicity to algae	Growth inhibition ErC50 Desmodesmus subspicatus (green algae): 72,7 mg/l; 72 h, Analytical monitoring: yes, OECD Test Guideline 201 Growth inhibition EC10 Desmodesmus subspicatus (green algae): 42,2 mg/l; 72 h, Analytical monitoring: yes, OECD Test Guideline 201
Biodegradability	0 %; 28 d; aerobic, OECD Test Guideline 301F, Not readily biodegradable
Partition coefficient: n-octanol/water	log Pow: 1,8 (23 °C), OECD Test Guideline 107, Bioaccumulation is not expected
Surface tension	65,4 mN/m at 20 °C, Method: OECD Test Guideline 115, similar to water

Section 13. Regulatory information

13.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

EU regulations	
Major Accident Hazard	SEVESO III
Legislation	FLAMMABLE LIQUIDS, P5c, Quantity 1: 5.000 t, Quantity 2: 50.000 t
Occupational restrictions	Take note of Dir 94/33/EC on the protection of young people at work. Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.
Regulation (EC) No 1005/2009 on substances that deplete the ozone layer	Not regulated
Regulation (EC) No 850/2004 of the European Parliament and of the Council of 29 April 2004 on persistent organic pollutants and amending Directive 79/117/EEC	Not regulated
Substances of very high concern (SVHC)	This product does not contain substances of very high concern according to Regulation (EC) No 1907/2006 (REACH), Article 57 above the respective regulatory concentration limit of ≥ 0.1 % (w/w).
National legislation Storage class	3

13.2. Chemical safety assessment

Chemical safety assessment

Section 14. Transport information

14.1. Land transport (ADR/RID)

UN number	UN 2920
Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (BUTANOL, HYDROCHLORIC ACID)
Class	8 (3)
Packing group	II
Environmentally hazardous	-
Special precautions for user	yes
Inland waterway transport (ADN)	Not relevant

14.2. Air transport (IATA)

UN number	UN 2920
Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (BUTANOL, HYDROCHLORIC ACID)
Class	8 (3)

Packing group	II
Environmentally hazardous	-
Special precautions for user	No
14.3. Sea transport (IMDG)	
UN number	UN 2920
Proper shipping name	CORROSIVE LIQUID, FLAMMABLE, N.O.S. (BUTANOL, HYDROCHLORIC ACID)
Class	8 (3)
Packing group	II
Environmentally hazardous	-
Special precautions for user	yes
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not relevant

Section 15. Other information

Abbreviations and acronyms used in the safety data sheet

IMDG	International Maritime Dangerous Goods.
CAS	Chemical Abstracts Service.
ATE	Acute Toxicity Estimate.
LC_{50}	Lethal Concentration to 50 % of a test population.