PanReac AppliChem
ITW Reagents

Safety Data Sheet
according to HPR, Schedule 1

Printing date 07/07/2023
Reviewed on 07/07/2023
Version number: 4.04

1 Identification

· **Product identifier**

· **Trade name: Kovacs' Reagent for clinical diagnosis**

· **Article number:** 2908
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
PANREAC QUIMICA S.L.U.
C/Garraf 2
Polígono Pla de la Bruguera
E-08211 Castellar del Vallès (Barcelona)
Tel. (+34) 937 489 400
Fax. (+34) 937 489 401
e-mail: product.safety@itwreagents.com

· **Information department:** email: product.safety@panreac.com
· **Emergency telephone number:**
Single telephone number for emergency calls: 112 (EU)
Tel.: (+34) 937 489 499

2 Hazard identification

· **Classification of the substance or mixture**

Flammable Liquids - Category 2	H225	Highly flammable liquid and vapour.
Acute Toxicity (Oral) - Category 4	H302	Harmful if swallowed.
Skin Irritation - Category 2	H315	Causes skin irritation.
Serious Eye Damage - Category 1	H318	Causes serious eye damage.
Specific Target Organ Toxicity - Single Exposure - Category 3	H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.

· **Label elements**
· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS02 GHS05 GHS07

· **Signal word** Danger

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· **Hazard-determining components of labeling:**
butan-1-ol
· **Hazard statements**

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H335-H336	May cause respiratory irritation. May cause drowsiness or dizziness.

· **Precautionary statements**

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take actions to prevent static discharges.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	If swallowed: Call a poison center/doctor if you feel unwell.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a poison center/doctor.
P321	Specific treatment (see on this label).
P330	Rinse mouth.
P362+P364	Take off contaminated clothing and wash it before reuse.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P370+P378	In case of fire: Use CO2, powder or water spray to extinguish.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**



Health = 3
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**



Health = *3
Fire = 3
Reactivity = 0

3 Composition/Information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

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Trade name: Kovacs' Reagent for clinical diagnosis

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· **Dangerous components:**

71-36-3	butan-1-ol	≥5-<100% w/w *
109-69-3	1-chlorobutane	≥0.5-<2% w/w *

* Actual concentration ranges are withheld as a trade secret.

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
Involve doctor immediately.
· **After inhalation:**
In case of unconsciousness place patient stably in side position for transportation.
If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
· **After skin contact:**
Call a doctor immediately.
Immediately wash with water and soap and rinse thoroughly.
Immediately remove any clothing soiled by the product.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** Call a doctor immediately.
· **Information for doctor:**
· **Most important symptoms and effects, both acute and delayed**
No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture**
In case of fire, the following can be released:
Nitrogen oxides (NOx)
Carbon monoxide and carbon dioxide
Forms explosive mixtures with air at ambient temperatures.
Vapours ara heavier than air and may spread along floors.
Beware of backfiring.
Forms explosive mixtures with air on intense heating.
· **Advice for firefighters**
· **Protective equipment:** Wear self-contained respiratory protective device.
· **Additional information**
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Contain escaping vapours with water.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.

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Avoid substance contact.
Do not inhale steams/aerosols.
· **Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to section 13.
Ensure adequate ventilation.
Clean up affected area.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

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7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect from heat.
Protect against electrostatic charges.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Provide acid-resistant floor.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Protect from heat and direct sunlight.
Open receptacle only under localized extractor facilities.
Store under lock and key and with access restricted to technical experts or their assistants only.
· **Recommended storage temperature:** 2-8°C
· **Storage class:** 3
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/ Personal protection

· **Additional information about design of technical systems:** No further data; see section 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
71-36-3 butan-1-ol	
EL	TWA: 15 ppm Ceiling: 30 ppm
EV	TWA: 20 ppm

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.

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Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Avoid contact with the eyes and skin.

· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
Use suitable respiratory protective device only when aerosol or mist is formed.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **For the permanent contact gloves made of the following materials are suitable:**
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min

· **As protection from splashes gloves made of the following materials are suitable:**
Recommended thickness of the material: ≥ 0.11 mm
Value for the permeation: Level ≥ 480 min

· **Eye protection:**



Gauze goggles

· **Body protection:**
Use protective suit.
Acid resistant protective clothing
Flame retardant antistatic protective clothing

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	Fluid
Color:	Yellowish
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value at 20 °C:**	0-0.5
· **Change in condition**	
Melting point/Melting range:	Undetermined.

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Boiling point/Boiling range:	Undetermined.
· **Flash point:**	36 °C
· **Flammability (solid, gaseous):**	Not applicable. Flammable.
· **Auto igniting:**	340 °C
· **Decomposition temperature:**	Not determined.
· **Ignition temperature:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/ vapor mixtures are possible.
· **Explosion limits:**	
Lower:	1.4 Vol %
Upper:	11.3 Vol %
· **Vapor pressure at 20 °C:**	6.7 hPa
· **Density:**	Not determined.
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not determined.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	87.2 %
Water:	1.7 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** In the event of fire: See chapter 5

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11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**
· **LD/LC50 values that are relevant for classification:**
Quantitative data on the toxicological effect of this product are not available.

· Components	Type	Value	Species
ATE (Acute Toxicity Estimate)			
Oral	LD50	2,625 mg/kg (rat)	
Dermal	LD50	3,995 mg/kg (rabbit)	
71-36-3 butan-1-ol			
Oral	LD50	2,292 mg/kg (rat)	
Dermal	LD50	3,430 mg/kg (rabbit)	

· **Primary irritant effect:**
· **on the skin:** Irritant to skin and mucous membranes.
· **on the eye:** Strong irritant with the danger of severe eye injury.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful
Irritant

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)		
7647-01-0	hydrogen chloride	3

· NTP (National Toxicology Program)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.

· Type of test	Effective concentration	Method	Assessment
71-36-3 butan-1-ol			
EC50/48 h	1,328 mg/l (daphnia magna)		
EC50/96 h	129 mg/l (Algae)		
	225 mg/l (Algae, Growth inhibition test)		
LC50/96 h	1,376 mg/l (fish)		

· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow product to reach ground water, water course or sewage system.
Water hazard class 1 (Self-assessment): slightly hazardous for water
Rinse off of bigger amounts into drains or the aquatic environment may lead to decreased pH-values. A low pH-value harms aquatic organisms. In the dilution of the use-level the pH-value is considerably increased, so that after the use of the product the aqueous waste, emptied into drains, is only low water-

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dangerous.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Chemicals must be disposed of in compliance with the respective national regulations.
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:**
Disposal must be made according to official regulations.
Packagings that cannot be cleansed are to be disposed of in the same manner as the product.

14 Transport information

· **UN-Number**	
· **DOT/TDG, ADR, IMDG, IATA**	UN1993
· **UN proper shipping name**	
· **DOT/TDG, ADR**	Flammable liquids, n.o.s. (Butanols, Chlorobutanes)
· **IMDG, IATA**	FLAMMABLE LIQUID, N.O.S. (BUTANOLS, CHLOROBUTANES)
· **Transport hazard class(es)**	
· **DOT/TDG (Transport dangerous goods):**	



· **Class**	3 Flammable liquids
· **Label**	3
· **ADR**	



· **Class**	3 (F1) Flammable liquids
· **Label**	3
· **IMDG, IATA**	



· **Class**	3 Flammable liquids
· **Label**	3

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· **Packing group**	
· **DOT/TDG, ADR, IMDG, IATA**	III
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Flammable liquids
· **Hazard identification number (Kemler code):**	30
· **EMS Number:**	F-E,S-E
· **Segregation groups**	(SGG10) Liquid halogenated hydrocarbons
· **Stowage Category**	A
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml
· **UN "Model Regulation":**	UN 1993 FLAMMABLE LIQUID, N.O.S. (BUTANOLS, CHLOROBUTANES), 3, III

15 Regulatory information

· **Safety, health and environmental regulations/legislation specific for the substance or mixture**
No further relevant information available.

· **Sara**

· **Section 355 (extremely hazardous substances):**

7647-01-0	hydrogen chloride

· **Section 313 (Specific toxic chemical listings):**

71-36-3	butan-1-ol
7647-01-0	hydrogen chloride

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Canadian substance listings:**

· **Canadian Domestic Substances List (DSL)**
All ingredients are listed.

· **Canadian Non-Domestic Substances List (NDSL)**
None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**
None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

71-36-3	butan-1-ol

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· **GHS label elements**
The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms**



GHS02 GHS05 GHS07

· **Signal word** Danger

· **Hazard-determining components of labeling:**
butan-1-ol
· **Hazard statements**
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335-H336 May cause respiratory irritation. May cause drowsiness or dizziness.
· **Precautionary statements**
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof [electrical/ventilating/lighting] equipment.
P242 Use non-sparking tools.
P243 Take actions to prevent static discharges.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312 If swallowed: Call a poison center/doctor if you feel unwell.
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a poison center/doctor.
P321 Specific treatment (see on this label).
P330 Rinse mouth.
P362+P364 Take off contaminated clothing and wash it before reuse.
P332+P313 If skin irritation occurs: Get medical advice/attention.
P370+P378 In case of fire: Use CO_2, powder or water spray to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Dept. Compliance

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Trade name: Kovacs' Reagent for clinical diagnosis

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· **Contact:**
· **Date of the latest revision of the safety data sheet** 07/07/2023
· **Abbreviations and acronyms:**
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
· *** Data compared to the previous version altered.**