



SAFETY DATA SHEET

LEUCOPERM REAGENT A - FIXATION REAGENT

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product name LEUCOPERM REAGENT A - FIXATION REAGENT

1.2. Relevant identified uses of the substance or mixture and uses advised against

Identified uses For research use only.

1.3. Details of the supplier of the safety data sheet

Supplier Web: www.bio-rad-antibodies.com
 Bio-Rad
 Endeavour House
 Langford Business Park
 Kidlington
 Oxford
 OX5 1GE
antibody_safetydatasheets@bio-rad.com

Contact person Technical Services Manager

1.4. Emergency telephone number

Emergency telephone +1 7037415970 (CHEMTREC)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards Not Classified

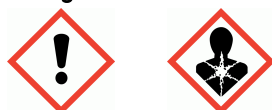
Health hazards Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 1B - H350 STOT SE 3 - H335

Environmental hazards Not Classified

Human health The product contains a sensitising substance. May cause sensitisation or allergic reactions in sensitive individuals. The product is irritating to eyes and skin. Contains a substance which may be potentially carcinogenic.

2.2. Label elements

Pictogram



Signal word

Danger

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Hazard statements	<p>H302+H332 Harmful if swallowed or if inhaled.</p> <p>H315 Causes skin irritation.</p> <p>H317 May cause an allergic skin reaction.</p> <p>H319 Causes serious eye irritation.</p> <p>H335 May cause respiratory irritation.</p> <p>H341 Suspected of causing genetic defects.</p> <p>H350 May cause cancer.</p>
Precautionary statements	<p>P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.</p> <p>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.</p> <p>P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P333+P313 If skin irritation or rash occurs: Get medical advice/ attention.</p> <p>P308+P311 IF exposed or concerned: Call a POISON CENTER or doctor.</p> <p>P501 Dispose of contents/ container in accordance with national regulations.</p>
Contains	FORMALDEHYDE
Supplementary precautionary statements	<p>P201 Obtain special instructions before use.</p> <p>P202 Do not handle until all safety precautions have been read and understood.</p> <p>P260 Do not breathe vapour/ spray.</p> <p>P261 Avoid breathing vapour/ spray.</p> <p>P264 Wash contaminated skin thoroughly after handling.</p> <p>P270 Do not eat, drink or smoke when using this product.</p> <p>P271 Use only outdoors or in a well-ventilated area.</p> <p>P272 Contaminated work clothing should not be allowed out of the workplace.</p> <p>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.</p> <p>P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P302+P352 IF ON SKIN: Wash with plenty of water.</p> <p>P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P308+P313 IF exposed or concerned: Get medical advice/ attention.</p> <p>P312 Call a POISON CENTRE/doctor if you feel unwell.</p> <p>P321 Specific treatment (see medical advice on this label).</p> <p>P362+P364 Take off contaminated clothing and wash it before reuse.</p> <p>P363 Wash contaminated clothing before reuse.</p> <p>P405 Store locked up.</p>

2.3. Other hazards

None.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

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FORMALDEHYDE	5-10%
CAS number: 50-00-0	EC number: 200-001-8
Classification Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 Skin Corr. 1B - H314 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Muta. 2 - H341 Carc. 1B - H350 STOT SE 3 - H335	Classification (67/548/EEC or 1999/45/EC) Carc. Cat. 3;R40 T;R23/24/25 C;R34 R43
METHANOL	<0.1%
CAS number: 67-56-1	EC number: 200-659-6
Classification Flam. Liq. 2 - H225 Acute Tox. 3 - H301 Acute Tox. 3 - H311 Acute Tox. 3 - H331 STOT SE 1 - H370	Classification (67/548/EEC or 1999/45/EC) F;R11 T;R23/24/25,R39/23/24/25

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

Composition comments No other ingredients, including those with occupational exposure limits, present above the level of disclosure

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. If breathing stops, provide artificial respiration. Get medical attention immediately.
Ingestion	Rinse mouth thoroughly with water. Give plenty of water to drink. Do not induce vomiting. Never give anything by mouth to an unconscious person. Do not induce vomiting. Get medical attention immediately.
Skin contact	Wash skin thoroughly with soap and water. Get medical attention if irritation persists after washing. Wash contaminated clothing before reuse.
Eye contact	Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention immediately. Continue to rinse.

4.2. Most important symptoms and effects, both acute and delayed

Inhalation	Irritation of nose, throat and airway. Vapours irritate the respiratory system. May cause coughing and difficulties in breathing.
Ingestion	Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract. May cause stomach pain or vomiting.

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Skin contact	Severe irritation. May cause sensitisation or allergic reactions in sensitive individuals. Prolonged contact may cause redness, irritation and dry skin. Burns can occur.
Eye contact	May cause severe eye irritation. May cause permanent damage if eye is not immediately irrigated.

4.3. Indication of any immediate medical attention and special treatment needed

Notes for the doctor	See Section 11 for additional information on health hazards.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Water spray, fog or mist. Foam. Powder.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards	Toxic gases or vapours.
Hazardous combustion products	Toxic gases/vapours/fumes of: Formaldehyde Carbon monoxide (CO).

5.3. Advice for firefighters

Protective actions during firefighting	No specific firefighting precautions known.
Special protective equipment for firefighters	Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	No smoking, sparks, flames or other sources of ignition near spillage. Wear protective clothing as described in Section 8 of this safety data sheet. Use suitable respiratory protection if ventilation is inadequate.
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6.2. Environmental precautions

Environmental precautions	Avoid the spillage or runoff entering drains, sewers or watercourses.
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6.3. Methods and material for containment and cleaning up

Methods for cleaning up	Absorb spillage with non-combustible, absorbent material. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13. Flush contaminated area with plenty of water.
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6.4. Reference to other sections

Reference to other sections	For personal protection, see Section 8. For waste disposal, see section 13.
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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions	Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients. Work in fume cupboard. Avoid the formation of mists. Avoid inhalation of vapours and contact with skin and eyes. Promptly remove any clothing that becomes contaminated. Wash hands after handling.
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7.2. Conditions for safe storage, including any incompatibilities

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Storage precautions Store in tightly-closed, original container in a well-ventilated place. Store at specified temperature. Refer to product label.

Storage class Refer to product datasheet.

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

FORMALDEHYDE

Long-term exposure limit (8-hour TWA): WEL 2 ppm 2.5 mg/m³

Short-term exposure limit (15-minute): WEL 2 ppm 2.5 mg/m³

METHANOL

Long-term exposure limit (8-hour TWA): WEL 200 ppm(Sk) 266 mg/m³(Sk)

Short-term exposure limit (15-minute): WEL 250 ppm(Sk) 333 mg/m³(Sk)

WEL = Workplace Exposure Limit

8.2. Exposure controls

Protective equipment



Appropriate engineering controls

Provide adequate ventilation. Avoid inhalation of vapours and spray/mists. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

Wear chemical splash goggles.

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. It is recommended that gloves are made of the following material: Nitrile rubber. It should be noted that liquid may penetrate the gloves. Frequent changes are recommended.

Other skin and body protection

Wear apron or protective clothing in case of contact. Promptly remove any clothing that becomes contaminated. Wash contaminated clothing before reuse.

Hygiene measures

Provide eyewash station. Do not smoke in work area. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated. Use appropriate skin cream to prevent drying of skin. When using do not eat, drink or smoke.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Appearance	Colourless liquid.
Colour	Colourless.
Odour	Pungent.
pH	pH (concentrated solution): pH 7.2 7.2

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Melting point	Not determined.
Initial boiling point and range	100@ 760mm Hg°C @
Flash point	Not applicable.
Evaporation rate	Not determined.
Upper/lower flammability or explosive limits	Not determined. Not applicable.
Vapour pressure	Not determined.
Vapour density	Not determined.
Relative density	>1.00 @ °C
Solubility(ies)	Not determined. Miscible with water.
Partition coefficient	Not determined.
Auto-ignition temperature	Not determined.
Decomposition Temperature	Not determined.
Viscosity	Not determined.
Explosive properties	Not determined.
Oxidising properties	Does not meet the criteria for classification as oxidising.

9.2. Other information

Other information None.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity There are no known reactivity hazards associated with this product.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Will not polymerise. May polymerise.

10.4. Conditions to avoid

Conditions to avoid Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Materials to avoid Strong oxidising agents. Mineral acids.

10.6. Hazardous decomposition products

Hazardous decomposition products None at ambient temperatures. Heating may generate the following products:
Vapours/gases/fumes of: Formaldehyde Carbon monoxide (CO).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological effects Harmful in contact with skin. Harmful if swallowed. Harmful by inhalation. May cause sensitisation by skin contact.

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Other health effects Carcinogen Category 2.

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 600.0

Species Rat

ATE oral (mg/kg) 1,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 270.0

Species Rabbit

ATE dermal (mg/kg) 3,000.0

Acute toxicity - inhalation

Species Rat

Notes (inhalation LC₅₀) 7.2

ATE inhalation (gases ppm) 7,000.0

ATE inhalation (vapours mg/l) 30.0

ATE inhalation (dusts/mists mg/l) 5.0

Skin corrosion/irritation

Human skin model test Not determined.

Extreme pH 7.2

Serious eye damage/irritation

Serious eye damage/irritation Irritating to eyes.

Skin sensitisation

Skin sensitisation Irritating to skin. May cause sensitisation by skin contact.

Germ cell mutagenicity

Genotoxicity - in vitro Not determined.

Genotoxicity - in vivo Not determined.

Carcinogenicity

Carcinogenicity Not determined.

Reproductive toxicity

Reproductive toxicity - fertility Not determined.

Specific target organ toxicity - single exposure

STOT - single exposure Not determined.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Not determined.

Aspiration hazard

Aspiration hazard Not determined.

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General information	Knowledge about health hazard is incomplete.
Inhalation	May cause an asthma-like shortness of breath.
Ingestion	Irritating. Symptoms following overexposure may include the following: Nausea, vomiting. Stomach pain. Gastrointestinal symptoms, including upset stomach.
Skin contact	Irritating to skin. Repeated exposure may cause skin dryness or cracking. May cause sensitisation by skin contact.
Eye contact	Irritation, burning, lachrymation, blurred vision after liquid splash.
Acute and chronic health hazards	May cause sensitisation by skin contact.
Route of exposure	Inhalation Ingestion. Skin and/or eye contact Skin absorption

Toxicological information on ingredients.

FORMALDEHYDE

Acute toxicity - oral

ATE oral (mg/kg) 100.0

Acute toxicity - dermal

ATE dermal (mg/kg) 300.0

Carcinogenicity

IARC carcinogenicity IARC Group 1 Carcinogenic to humans.

SECTION 12: Ecological Information

Ecotoxicity The product is not expected to be hazardous to the environment.

12.1. Toxicity

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish Not determined.

12.2. Persistence and degradability

Persistence and degradability The product is expected to be biodegradable.

12.3. Bioaccumulative potential

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Partition coefficient Not determined.

12.4. Mobility in soil

Mobility The product is soluble in water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment No information available.

12.6. Other adverse effects

Other adverse effects The product contains a substance which may cause long-term adverse effects in the aquatic environment. However, at the concentrations present this product does not need to be classified as hazardous for the environment and the effects are not expected to be significant.

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Waste should be treated as controlled waste. Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
Road transport notes	Not classified.
Rail transport notes	Not classified.
Sea transport notes	Not classified.
Air transport notes	Not classified.

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not known.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).
Guidance	Workplace Exposure Limits EH40. Approved Classification and Labelling Guide (Sixth edition) L131. Safety Data Sheets for Substances and Preparations.

15.2. Chemical safety assessment

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No chemical safety assessment has been carried out.

SECTION 16: Other information

General information	Only trained personnel should use this material.
Revision date	01/04/2019
Revision	7
Supersedes date	21/09/2018
SDS number	10187
Risk phrases in full	R11 Highly flammable. R20/21/22 Harmful by inhalation, in contact with skin and if swallowed. R23/24/25 Toxic by inhalation, in contact with skin and if swallowed. R34 Causes burns. R36/37/38 Irritating to eyes, respiratory system and skin. R37 Irritating to respiratory system. R39/23/24/25 Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. R40 Limited evidence of a carcinogenic effect. R43 May cause sensitisation by skin contact.
Hazard statements in full	H225 Highly flammable liquid and vapour. H301 Toxic if swallowed. H302 Harmful if swallowed. H311 Toxic in contact with skin. H314 Causes severe skin burns and eye damage. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H331 Toxic if inhaled. H332 Harmful if inhaled. H335 May cause respiratory irritation. H341 Suspected of causing genetic defects. H350 May cause cancer. H370 Causes damage to organs .

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.