

# BIOSYSTEMS

# **Pretreatment Solution B USA**

# Leica Biosystems

Version No: 1.3

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Chemwatch Hazard Alert Code: 0

Issue Date: 09/02/2015 Print Date: 09/02/2015 Initial Date: 05/11/2015 S.GHS.USA.EN

# SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

#### **Product Identifier**

Product name	Pretreatment Solution B USA
Synonyms	LK-100x
Other means of identification	Not Available

# Relevant identified uses of the substance or mixture and uses advised against

	Relevant identified uses	Part of pretreatment kits
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## Details of the supplier of the safety data sheet

Registered company name	Leica Biosystems		
Address	00 Leider Lane Benton Lane · Buffalo Grove IL 60089 United_		
Telephone	800-248-0123		
Fax	Not Available		
Website	www.LeicaBiosystems.com		
Email	kreatech-support@leicabiosystems.com		

# Emergency telephone number

Association / Organisation	Leica Biosystems
Emergency telephone numbers	800-248-0123
Other emergency telephone numbers	Not Available

# **SECTION 2 HAZARDS IDENTIFICATION**

### Classification of the substance or mixture

# CHEMWATCH HAZARD RATINGS

	Min IV	lax
lammability	0	
oxicity	0	0 = Minimum
Body Contact	0	1 = Low
Reactivity	0	2 = Moderate
Chronic	0	3 = High 4 = Extreme



GHS Classification	Not Applicable
Label elements	
GHS label elements	Not Applicable
OLONAL WORD	NOT APPLICABLE

## Hazard statement(s)

Not Applicable

Precautionary statement(s) Prevention

Version No: 1.3 Page 2 of 7 Issue Date: 09/02/2015 Print Date: 09/02/2015

#### **Pretreatment Solution B USA**

Precautionary statement(s) Response

Precautionary statement(s) Storage

Precautionary statement(s) Disposal

## **SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS**

#### Substances

See section below for composition of Mixtures

#### Mixtures

CAS No	%[weight]	Name
7732-18-5	85-100	water
540-72-7	1-10	sodium thiocyanate

#### **SECTION 4 FIRST AID MEASURES**

#### Description of first aid measures

Eye Contact	If this product comes in contact with eyes:  • Wash out immediately with water.  • If irritation continues, seek medical attention.  • Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	If skin or hair contact occurs:  Flush skin and hair with running water (and soap if available).  Seek medical attention in event of irritation.
Inhalation	If fumes, aerosols or combustion products are inhaled remove from contaminated area. Other measures are usually unnecessary.  If fumes, aerosols or combustion products are inhaled remove from the following the following states are usually unnecessary.
Ingestion	Immediately give a glass of water.     First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

#### Most important symptoms and effects, both acute and delayed

See Section 11

## Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

For thiocyanate poisonings haemodialysis is recommended as the treatment of choice. Phenobarbital protects poisoned animals against death. Thiocyanate ion is slowly excreted in the urine and is not decomposed to any appreciable degree to cyanide.

[GOSSELIN, SMITH & HODGE: Clinical Toxicology of Commercial Products 5th Ed]

## **SECTION 5 FIREFIGHTING MEASURES**

#### **Extinguishing media**

F	There is no restriction	n on the type o	f extinguisher	which may be use	ed.

• Use extinguishing media suitable for surrounding area.

## Special hazards arising from the substrate or mixture

Fire Incompatibility None known.

Fire Fighting

# Advice for firefighters

Alert Fire Brigade and tell them location and nature of hazard. Wear breathing apparatus plus protective gloves in the event of a fire.

Prevent, by any means available, spillage from entering drains or water

courses. Use fire fighting procedures suitable for surrounding area.  $\ensuremath{\mathbf{DO}}$   $\ensuremath{\mathbf{NOT}}$  approach containers suspected to be hot.

Cool fire exposed containers with water spray from a protected

location. If safe to do so, remove containers from path of fire.

 ${\color{red} \bullet} \ \ \, \text{Equipment should be thoroughly decontaminated after use}.$ 

# Fire/Explosion Hazard

Non combustible.

Not considered a significant fire risk, however containers may burn.

## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

# Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul> <li>Clean up all spills immediately.</li> <li>Avoid breathing vapours and contact with skin and eyes.</li> <li>Control personal contact with the substance, by using protective</li> <li>equipment. Contain and absorb spill with sand, earth, inert material</li> <li>or vermiculite. Wipe up.</li> <li>Place in a suitable, labelled container for waste disposal.</li> </ul>
Major Spills	Not Applicable

 Version No: 1.3
 Page 3 of 7
 Issue Date: 09/02/2015

#### **Pretreatment Solution B USA**

Print Date: 09/02/2015

Personal Protective Equipment advice is contained in Section 8 of the SDS.

#### **SECTION 7 HANDLING AND STORAGE**

#### Precautions for safe handling

- ▶ Limit all unnecessary personal contact.
- ▶ Wear protective clothing when risk of exposure occurs.
- ▶ Use in a well-ventilated area.
- ▶ Avoid contact with incompatible materials.
- When handling, DO NOT eat, drink or smoke
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- ▶ Observe manufacturer's storage and handling recommendations contained within this MSDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.

Other information

Safe handling

Not Applicable

#### Conditions for safe storage, including any incompatibilities

- ▶ Polyethylene or polypropylene container.
- ▶ Packing as recommended by manufacturer.
- F Check all containers are clearly labelled and free from leaks

Storage incompatibility

Avoid contamination of water, foodstuffs, feed or seed. None known

# SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

#### Control parameters

#### OCCUPATIONAL EXPOSURE LIMITS (OEL)

#### INGREDIENT DATA

Not Available

# EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
sodium thiocyanate	Sodium isothiocyanate; (Thiocyanic acid, sodium salt)	0.041 mg/m3	0.45 mg/m3	46 mg/m3

Ingredient	Original IDLH	Revised IDLH
water	Not Available	Not Available
sodium thiocyanate	Not Available	Not Available

## **Exposure controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.

Employers may need to use multiple types of controls to prevent employee overexposure.

General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.

Appropriate engineering controls

Type of Contaminant:	Air Speed:
solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood - local control only

Version No: **1.3** Page **4** of **7** Issue Date: **09/02/2015** 

#### **Pretreatment Solution B USA**

Print Date: 09/02/2015

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used. Personal protection Safety glasses with side shields Chemical goggles. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of Eye and face protection chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent] Skin protection See Hand protection below Wear general protective gloves, eg. light weight rubber gloves. The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical 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. The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice. Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: requency and duration of contact, chemical resistance of glove material, glove thickness and Hands/feet protection dexterity Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent). • When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. Contaminated gloves should be replaced. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended. Body protection See Other protection below Other protection No special equipment needed when handling small quantities.

### Respiratory protection

Thermal hazards

Not Available

#### **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

Not Available

#### Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Liquid	Relative density (Water = 1)	Not Available
Odour	Not Available	Partition coefficient	Not Available
		n-octanol / water	
Odour threshold	Not Available	Auto-ignition temperature	Not Available
		(°C)	
pH (as supplied)	Not Available	Decomposition	Not Available
		temperature	
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Available
Flash point (°C)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Immiscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

 Version No: 1.3
 Page 5 of 7
 Issue Date: 09/02/2015

#### **Pretreatment Solution B USA**

Print Date: 09/02/2015

#### **SECTION 10 STABILITY AND REACTIVITY**

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

#### **SECTION 11 TOXICOLOGICAL INFORMATION**

Information on toxic	ological effe	ects
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The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. Not normally a hazard due to non-volatile nature of product
The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis.  The material is unlikely to produce an irritant dermatitis as described in EC Directives.
Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Pretreatment Solution B USA	TOXICITY  Not Available	IRRITATION  Not Available	
water	TOXICITY  Oral (rat) LD50: >90000 mg/kg <sup>[2]</sup>	IRRITATION  Not Available	
sodium thiocyanate	TOXICITY  dermal (rat) LD50: >2000 mg/kg [1]  Oral (rat) LD50: 232 mg/kg [2]	IRRITATION Nil available.	

Legend:

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.\* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

#### Goitrogenic:.

Goitrogens are substances that suppress the function of the thyroid gland by interfering with iodine uptake, which can, as a result, cause an enlargement of the thyroid, i.e., a goitre

# Goitrogens include:

- Vitexin, a flavanoid, which inhibits thyroid peroxidase thus contributing to goiter.
- Ions such as thiocyanate and perchlorate which decrease iodide uptake by competitive inhibition; as a consequence of reduced thyroxine and triiodothyronine secretion by the gland, at low doses, this causes an increased release of thyrotropin (by reduced negative feedback), which then stimulates the gland.
- Lithium which inhibits thyroid hormone release.
- Certain foods, such as soy and millet (containing vitexins) and vegetables in the genus Brassica (e.g. broccoli, brussels sprouts, cabbage, horseradish).
- Caffeine (in coffee, tea, cola, chocolate) which acts on thyroid function as a suppressant.

Flaccid paralysis, parasympathomimetic changes, tremor, excitement, muscle contraction, dyspnae, respiratry stimulation, nausea and vomiting recorded.

# Pretreatment Solution B USA & WATER

SODIUM THIOCYANATE

No significant acute toxicological data identified in literature search.

Acute Toxicity	0	Carcinogenicity	0
Skin Irritation/Corrosion	0	Reproductivity	0
Serious Eye Damage/Irritation	0	STOT - Single Exposure	0
Respiratory or Skin sensitisation	0	STOT - Repeated Exposure	0
Mutagenicity	0	Aspiration Hazard	0

Legend:

— Data required to make classification available

— Data available but does not fill the criteria for classification

Not Available to make classification

 Version No: 1.3
 Page 6 of 7
 Issue Date: 09/02/2015

#### **Pretreatment Solution B USA**

Print Date: 09/02/2015

#### Toxicity

For Thiocyanates

Terrestrial Fate: Soil - At near ambient temperatures (approximately 30 C.) it appears that sorption and volatilization are not significant processes for thiocyanate in soil, with thiocyanate losses due primarily to microbial degradation. Thiocyanate is not persistent in soils. Thiocyanate may undergo both aerobic and anaerobic microbial degradation; however, the degradation pathway has not been defined. Saturated soils treated with thiocyanate were found to emit carbonyl sulfide (COS). Microbial degradation is the primary mechanism for thiocyanate disappearance at or below 30 C., with carbonyl sulfide as a possible hydrolysis product. Loss of thiocyanate at higher temperatures (50-60 C.) did not appear to result from microbial degradation.

Aquatic Fate: Biodegradation is a significant transformation process for thiocyanates in natural waters. Thiocyanate is toxic to microorganisms at high concentrations; however, acclimated cultures have increased tolerance to this compound. At concentrations up to 1.42 g/L., thiocyanate is completely degraded within 4 days to ammonia and sulfate ion (SO4-2) by an acclimatized co-culture of two bacteria (Acinetobacter johnsonii and Pseudomonas diminuta).

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
water	LOW	LOW

#### **Bioaccumulative potential**

Ingredient	Bioaccumulation
water	LOW (LogKOW = -1.38)

#### Mobility in soil

Ingredient	Mobility
water	LOW (KOC = 14.3)

#### **SECTION 13 DISPOSAL CONSIDERATIONS**

#### Waste treatment methods

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate

- Reduction
- Reuse
- Recycling
- ▶ Disposal (if all else fails)

# Product / Packaging disposal

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- ▶ DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible
- Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility
  can be identified.
- Dispose of by: burial in a land-fill specifically licenced to accept chemical and / or pharmaceutical wastes or incineration in a licenced apparatus (after admixture with suitable combustible material).
- ▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

## **SECTION 14 TRANSPORT INFORMATION**

#### Labels Required

Marine Pollutant NO

Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	sodium thiocyanate	Y

#### **SECTION 15 REGULATORY INFORMATION**

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

WATER(7732-18-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

SODIUM THIOCYANATE(540-72-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

# Federal Regulations

Version No: **1.3** Page **7** of **7** Issue Date: **09/02/2015** 

#### **Pretreatment Solution B USA**

Print Date: **09/02/2015** 

# Superfund Amendments and Reauthorization Act of 1986 (SARA)

## SECTION 311/312 HAZARD CATEGORIES

Immediate (acute) health hazard	NO
Delayed (chronic) health hazard	NO
Fire hazard	NO
Pressure hazard	NO
Reactivity hazard	NO

## US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

#### State Regulations

## US. CALIFORNIA PROPOSITION 65

None Reported

National Inventory	Status	
Australia - AICS	Y	
Canada - DSL	Y	
Canada - NDSL	N (water; sodium thiocyanate)	
China - IECSC	Υ	
Europe - EINEC / ELINCS / NLP	Y	
Japan - ENCS	N (water)	
Korea - KECI	Y	
New Zealand - NZIoC	Y	
Philippines - PICCS	Υ	
USA - TSCA	Υ	
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)	

# **SECTION 16 OTHER INFORMATION**

## Other information

# Ingredients with multiple cas numbers

Name	CAS No
sodium thiocyanate	104345-12-2, 13249-87-1, 540-72-7, 885623-98-3

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be

found at: www.chemwatch.net

The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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