



MATERIAL SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 03/21/2013

Revision Date 12/19/2012

1 Identification of the Substance/Mixture and Company

Product Name: Karnovsky's Fixative

MSDS Code: SSFXKAR

Product Description: Tissue Fixative

Manufacturer/Supplier:

American MasterTech
1330 Thurman Street
Lodi, CA 95240
USA
(800) 860-4073

European Authorized Representative:

Emergo Europe
Moleensraat 15
2513 BH The Hague,
The Netherlands

Emergency Telephone Number: Infotrac (800) 535-5053 (24 hours) - International (011) 352-323-3500

2 Hazards Identification

Classification of the substance or mixture



GHS08 Health hazard

Resp. Sens. 1 H334

May cause allergy or asthma symptoms or breathing difficulties if inhaled.



GHS07

Skin Irrit. 2 H315

Causes skin irritation.

H319

Causes serious eye irritation.

Skin Sens. 1 H317

May cause an allergic skin reaction.

STOT SE 3 H335+H336

May cause respiratory irritation. May cause drowsiness or dizziness.

Acute Tox. 5 H333

May be harmful if inhaled.

Classification according to Directive 67/548/EEC or Directive 1999/45/EC



Xn; Sensitizing

R42/43:

May cause sensitisation by inhalation and skin contact.



Xi; Irritant

R36/37/38: Irritating to eyes, respiratory system and skin.

Information concerning particular hazards for human and environment:

The product has to be labelled due to the calculation procedure of international guidelines.

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Product Name: Karnovsky's Fixative**Classification system:**

The classification was made according to the latest editions of international substances lists, and expanded upon from company and literature data.

Label elements**Labeling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:

Harmful

Hazard-determining components of labeling:

glutaral

formaldehyde

Risk phrases:

36/37/38 Irritating to eyes, respiratory system and skin.

42/43 May cause sensitisation by inhalation and skin contact.

Safety phrases:

2 Keep out of the reach of children.

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

24/25 Avoid contact with skin and eyes.

37 Wear suitable gloves.

45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

56 Dispose of this material and its container to hazardous or special waste collection point.

63 In case of accident by inhalation: remove casualty to fresh air and keep at rest.

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

Health = 3

Fire = 0

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 3

Fire = 0

Reactivity = 0

Other hazards**Results of PBT and vPvB assessment****PBT:** Not applicable.**vPvB:** Not applicable.**3 Composition****Chemical characterization: Mixtures****Description:** Mixture of the substances listed below with nonhazardous additions.

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Dangerous components:		
CAS: 124-65-2 EINECS: 204-708-2	sodium dimethylarsinate ⚠ Acute Tox. 3, H301	<2.5%
CAS: 111-30-8 EINECS: 203-856-5	glutaral ⚠ Acute Tox. 3, H301; Acute Tox. 3, H331; ⚠ Resp. Sens. 1, H334; ⚠ Skin Corr. 1B, H314; ⚠ Skin Sens. 1, H317; H227	<2%
CAS: 50-00-0 EINECS: 200-001-8	formaldehyde ⚠ Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; ⚠ Carc. 2, H351; ⚠ Skin Corr. 1B, H314; ⚠ Skin Sens. 1, H317	<1%

4 First Aid Measures**Description of first aid measures****After inhalation:**

Supply fresh air and to be sure call for a doctor.

In case of unconsciousness place patient stably in side position for transportation.

After skin contact: Immediately wash with water and soap and rinse thoroughly.**After eye contact:** Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.**After swallowing:** If symptoms persist consult doctor.**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 Firefighting 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:** No further relevant information available.**Advice for firefighters****Protective equipment:** No special measures required.**6 Accidental Release Measures****Personal precautions, protective equipment and emergency procedures:** Not required.**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 item 13.

Ensure adequate ventilation.

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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Product Name: Karnovsky's Fixative**7 Handling and Storage****Handling:****Precautions for safe handling:**

Ensure good ventilation/exhaustion at the workplace.

Prevent formation of aerosols.

Information about protection against explosions and fires: No special measures required.**Conditions for safe storage, including any incompatibilities****Storage:****Requirements to be met by storerooms and receptacles:** No special requirements.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:** Keep receptacle tightly sealed.**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 item 7.**Control parameters****Components with limit values that require monitoring at the workplace:****111-30-8 glutaral**

REL	Short-term value: C 0.8 mg/m ³ , C 0.2 ppm See Pocket Guide App. C
TLV	Short-term value: C 0.2 mg/m ³ , C 0.05 ppm SEN;activated or inactivated

50-00-0 formaldehyde

PEL	Short-term value: 2 ppm Long-term value: 0.75 ppm see 29 CFR 1910.1048(c)
REL	Short-term value: C 0.1* ppm Long-term value: 0.016 ppm *15-min; See Pocket Guide App. A
TLV	Short-term value: C 0.37 mg/m ³ , C 0.3 ppm SEN

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.

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.

Protection of hands:

Protective gloves

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The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

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.

Eye protection: Tightly sealed goggles

9 Physical and Chemical Properties**Information on basic physical and chemical properties****General Information****Appearance**

Form:	Fluid
Color:	Colorless
Odor:	Pungent, makes eyes water
Odor threshold:	Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	100°C (212 °F)

Flash point: Not applicable.

Flammability (solid, gaseous): Not applicable.

Ignition temperature:

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower:	Not determined.
Upper:	Not determined.

Vapor pressure at 20°C (68 °F): 23 hPa (17 mm Hg)

Density:	Not determined.
Relative density:	Not determined.
Vapour density:	Not determined.
Evaporation rate:	Not determined.

Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

Segregation coefficient (n-octanol/water): Not determined.

Dynamic: Not determined.

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Kinematic:	Not determined.
Other information:	No further relevant information available.

10 Stability and Reactivity**Reactivity:****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:** No dangerous decomposition products known.**11 Toxicology Information****Information on toxicological effects****Acute toxicity:****LD/LC50 values that are relevant for classification:****111-30-8 glutaral**

Oral	LD50	134 mg/kg (rat)
Dermal	LD50	2560 mg/kg (rabbit)

Primary irritant effect:**On the skin:** Irritant to skin and mucous membranes.**On the eye:** Irritating effect.**Sensitization:**

Sensitization possible through inhalation.

Sensitization possible through skin contact.

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)**

50-00-0	formaldehyde	1
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NTP (National Toxicology Program)

50-00-0	formaldehyde	R
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12 Ecological Information**Toxicity:****Aquatic toxicity:** No further relevant information available.**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.

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Product Name: Karnovsky's Fixative**Additional ecological information:****General notes:**

Water hazard class 2 (Self-assessment): hazardous for water

Do not allow product to reach ground water, water course or sewage system.

Danger to drinking water if even small quantities leak into the ground.

Results of PBT and vPvB assessment**PBT:** Not applicable.**vPvB:** Not applicable.**Other adverse effects:** No further relevant information available.**13 Disposal Considerations****Uncleaned packagings:****Recommendation:** Disposal must be made according to official regulations.**14 Transport Information**

UN-Number DOT, ADR, ADN, IMDG, IATA	Void
UN proper shipping name DOT, ADR, ADN, IMDG, IATA	Void
Transport hazard class(es) DOT, ADR, ADN, IMDG, IATA Class	Void
Packing group DOT, ADR, IMDG, IATA	Void
Environmental hazards Marine pollutant:	No
Special precautions for user:	Not applicable.
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not applicable.
UN "Model Regulation":	-

15 Regulatory Information**Safety, health and environmental regulations/legislation specific for the substance or mixture****SARA****Section 355 (extremely hazardous substances):**

124-65-2 | sodium dimethylarsinate

50-00-0 | formaldehyde

Section 313 (Specific toxic chemical listings):

50-00-0 | formaldehyde

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Product Name: Karnovsky's Fixative**TSCA (Toxic Substances Control Act):**

All ingredients are listed.

Proposition 65**Chemicals known to cause cancer:**

50-00-0 formaldehyde

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

None of the ingredients are listed.

Carcinogenic categories**EPA (Environmental Protection Agency)**

50-00-0 formaldehyde

B1

TLV (Threshold Limit Value established by ACGIH)

111-30-8 glutaral

A4

50-00-0 formaldehyde

A2

NIOSH-Ca (National Institute for Occupational Safety and Health)

50-00-0 formaldehyde

OSHA-Ca (Occupational Safety & Health Administration)

50-00-0 formaldehyde

Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

Hazard symbols:

Harmful

Hazard-determining components of labelling:

glutaral

formaldehyde

Risk phrases:

36/37/38 Irritating to eyes, respiratory system and skin.

42/43 May cause sensitisation by inhalation and skin contact.

Safety phrases:

2 Keep out of the reach of children.

23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).

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Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other Information

This information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of the material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.

Department issuing MSDS: Regulatory Department**Contact:** Phone (800) 860-4073**Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

NFPA: National Fire Protection Association (USA)

HMIS: Hazardous Materials Identification System (USA)

LC50: Lethal concentration, 50 percent

LD50: Lethal dose, 50 percent

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