



SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

1 Identification of the Substance/Mixture and Company

Product Name: Optimal Fix

SDS Code: SSFXOPT

Product Description: Tissue Fixative

Manufacturer/Supplier:

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

European Authorized Representative:

Emergo Europe
Prinsessegracht 20
2514 AP 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



GHS02 Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.



GHS08 Health hazard

Carc. 1A H350 May cause cancer.

Aquatic Acute 3 H402 Harmful to aquatic life.

Aquatic Chronic 3 H412 Harmful to aquatic life with long lasting effects.

Label elements

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

Hazard pictograms



GHS02



GHS08

Signal word Danger

Hazard-determining components of labeling:

ethanol

Hazard statements

Highly flammable liquid and vapor.

May cause cancer.

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

Precautionary statements

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid release to the environment.

Wear protective gloves/protective clothing/eye protection/face protection.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.

IF exposed or concerned: Get medical advice/attention.

In case of fire: Use for extinction: CO₂, powder or water spray.

Store in a well-ventilated place. Keep cool.

Store locked up.

Dispose of contents/container in accordance with local/regional/national/international regulations.

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

Health = 1

Fire = 3

Reactivity = 0

HMIS-ratings (scale 0 - 4)

Health = 1

Fire = 3

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.

Dangerous components:		
64-17-5	ethanol	25-50%
107-21-1	ethanediol	25-50%
7646-85-7	zinc chloride	≥0.25-≤1%

4 First Aid Measures

Description of first aid measures**After inhalation:** Supply fresh air; consult doctor in case of complaints.**After skin contact:** Generally the product does not irritate the skin.**After eye contact:** Rinse opened eye for several minutes under running water.**After swallowing:** If symptoms persist consult doctor.

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

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:

Wear protective equipment. Keep unprotected persons away.

Environmental precautions:

Inform respective authorities in case of seepage into water course or sewage system.

Dilute with plenty of water.

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.

Protective Action Criteria for Chemicals**PAC-1:**

64-17-5	ethanol	1,800 ppm
107-21-1	ethanediol	30 ppm
64-19-7	acetic acid	5 ppm
7646-85-7	zinc chloride	2 mg/m ³

PAC-2:

64-17-5	ethanol	3300* ppm
107-21-1	ethanediol	150 ppm
64-19-7	acetic acid	35 ppm
7646-85-7	zinc chloride	800 mg/m ³

PAC-3:

64-17-5	ethanol	15000* ppm
107-21-1	ethanediol	900 ppm
64-19-7	acetic acid	250 ppm

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

7646-85-7 | zinc chloride

4,800 mg/m³

7 Handling and Storage

Handling:**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace.**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Conditions for safe storage, including any incompatibilities**Storage:****Requirements to be met by storerooms and receptacles:** Store in a cool location.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

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:****64-17-5 ethanol**PEL Long-term value: 1900 mg/m³, 1000 ppmREL Long-term value: 1900 mg/m³, 1000 ppmTLV Short-term value: 1880 mg/m³, 1000 ppm**107-21-1 ethanediol**TLV Short-term value: 10** mg/m³, 50* ppm

Long-term value: 25* ppm

*vapor fraction:**inh. fraction, aerosol only

7646-85-7 zinc chloridePEL Long-term value: 1 mg/m³
FumeREL Short-term value: 2 mg/m³
Long-term value: 1 mg/m³TLV Short-term value: 2 mg/m³
Long-term value: 1 mg/m³
fume**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.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

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

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:	Characteristic
Odor threshold:	Not determined.
pH-value:	Not determined.
Change in condition	
Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	78 °C (172.4 °F)
Flash point:	13 °C (55.4 °F)
Flammability (solid, gaseous):	Not applicable.
Ignition temperature:	410 °C (770 °F)
Decomposition temperature:	Not determined.
Auto igniting:	Product is not selfigniting.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
Explosion limits:	
Lower:	3.2 Vol %
Upper:	53 Vol %
Vapor pressure at 20 °C (68 °F):	59 hPa (44.3 mm Hg)
Density:	Not determined.
Relative density:	Not determined.
Vapour density:	Not determined.
Evaporation rate:	Not determined.

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

Solubility in / Miscibility with Water:	Fully miscible.
Partition coefficient (n-octanol/water):	Not determined.
Dynamic:	Not determined.
Kinematic:	Not determined.
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: No dangerous decomposition products known.

11 Toxicology Information

Information on toxicological effects

Acute toxicity:

LD/LC50 values that are relevant for classification:

107-21-1 ethanediol

Oral	LD50	5,840 mg/kg (rat)
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Dermal	LD50	9,530 mg/kg (rabbit)
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7646-85-7 zinc chloride

Oral	LD50	350 mg/kg (rat)
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Primary irritant effect:

On the skin: No irritant effect.

On the eye: No irritating effect.

Sensitization: No sensitizing effects known.

Additional toxicological information:

The product shows the following dangers according to internally approved calculation methods for preparations:

Carcinogenic categories

IARC (International Agency for Research on Cancer)

64-17-5	ethanol	1
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NTP (National Toxicology Program)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

Product Name: Optimal Fix

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.**Ecotoxicological effects:****Remark:** Harmful to fish**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.


Harmful to aquatic organisms

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.**Recommended cleansing agent:** Water, if necessary with cleansing agents.

14 Transport Information

UN-Number	UN1170
DOT, ADR, IMDG, IATA	
UN proper shipping name	
DOT	Ethanol
ADR	1170 Ethanol
IMDG	ETHANOL (ETHYL ALCOHOL)
IATA	ETHANOL
Transport hazard class(es)	
DOT	
	
Class	3 Flammable liquids


SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

Review Date 01/30/2018

Revision Date 01/30/2018

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Label	3
ADR, IMDG, IATA	
	
Class Label	3 Flammable liquids 3
Packing group DOT, ADR, IMDG, IATA	II
Environmental hazards Marine pollutant:	No
Special precautions for user:	Warning: Flammable liquids
Danger code (Kemler):	33
EMS Number:	F-E,S-D
Stowage Category	A
Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code:	Not applicable.
Transport/Additional information:	
DOT Quantity limitations	On passenger aircraft/rail: 5 L On cargo aircraft only: 60 L
ADR Excepted quantities (EQ)	Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
IMDG Limited quantities (LQ) Excepted quantities (EQ)	1L Code: E2 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 500 ml
UN "Model Regulation":	UN 1170 ETHANOL, 3, II

15 Regulatory Information

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

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

107-21-1	ethanediol
7646-85-7	zinc chloride

SAFETY DATA SHEET

In Accordance with ISO/DIS 11014

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Revision Date 01/30/2018

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TSCA (Toxic Substances Control Act):	
All ingredients are listed.	
Proposition 65	
Chemicals known to cause cancer:	
None of the ingredients is listed.	
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:	
64-17-5	ethanol
107-21-1	ethanediol

Carcinogenic categories

EPA (Environmental Protection Agency)	
7646-85-7	zinc chloride
	D, I, II

TLV (Threshold Limit Value established by ACGIH)

64-17-5	ethanol	A3
107-21-1	ethanediol	A4

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

None of the ingredients are listed.

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

GHS02 GHS08

Signal word Danger**Hazard-determining components of labeling:**

ethanol

Hazard statements

Highly flammable liquid and vapor.

May cause cancer.

Harmful to aquatic life.

Harmful to aquatic life with long lasting effects.

Precautionary statements

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Keep container tightly closed.

Ground/bond container and receiving equipment.

Use explosion-proof electrical/ventilating/lighting/equipment.

Use only non-sparking tools.

Take precautionary measures against static discharge.

Avoid release to the environment.

SAFETY DATA SHEET

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Wear protective gloves/protective clothing/eye protection/face protection.
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
 IF exposed or concerned: Get medical advice/attention.
 In case of fire: Use for extinction: CO₂, powder or water spray.
 Store in a well-ventilated place. Keep cool.
 Store locked up.
 Dispose of contents/container in accordance with local/regional/national/international regulations.

National regulations:

Additional classification according to Decree on Hazardous Materials:

Carcinogenic hazardous material group III (dangerous).

Information about limitation of use:

Workers are not allowed to be exposed to the hazardous carcinogenic materials contained in this preparation. Exceptions can be made by the authorities in certain cases.

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 SDS: Regulatory Department

Contact: Phone (800) 860-4073

Date of preparation / last revision 01/30/2018 / -

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
 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
 NIOSH: National Institute for Occupational Safety
 OSHA: Occupational Safety & Health
 TLV: Threshold Limit Value
 PEL: Permissible Exposure Limit
 REL: Recommended Exposure Limit
 Flam. Liq. 2: Flammable liquids – Category 2
 Carc. 1A: Carcinogenicity – Category 1A
 Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3
 Aquatic Chronic 3: Hazardous to the aquatic environment - long-term aquatic hazard – Category 3

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