# Safety Data Sheet



# Section 1: Identification of the Substance/Mixture and of the Company/Undertaking

# 1.1 Product identifier

Product Name
• Chroma/Last
• Clear liquid.

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

Relevant identified use(s) • Stencil hardener

### 1.3 Details of the supplier of the safety data sheet

Manufacturer • IKONICS Corporation

4832 Grand Ave. Duluth, MN 55807 United States www.ikonics.com sds@ikonics.com

Telephone (General) • (218) 628-2217

Telephone (General) • (800) 328-4261 - Toll free

### 1.4 Emergency telephone number

Chemtrec • 1-800-424-9300 - Within USA and Canada

• +1 703-527-3887 - Outside USA and Canada (collect calls accepted)

### **Section 2: Hazards Identification**

### **EU/EEC**

DSD/DPD

According to EU Directive 1272/2008 (CLP)/REACH 1907/2006 [amended by 453/2010] According to EU Directive 67/548/EEC (DSD) or 1999/45/EC (DPD)

#### 2.1 Classification of the substance or mixture

**CLP** • Skin Sensitization 1 - H317

Mutagenic Substances - Category 3

- · · - · ·

R43, R68

• Harmful (Xn)

### 2.2 Label Elements

**CLP** 

#### WARNING



Hazard statements • H317 - May cause an allergic skin reaction

Precautionary statements

**Prevention** • P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.

P264 - Wash thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response • P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P321 - Specific treatment, see supplemental first aid information.

P363 - Wash contaminated clothing before reuse.

Storage/Disposal • P501 - Dispose of content and/or container in accordance with local, regional, national,

and/or international regulations.

#### DSD/DPD



Risk phrases • R43 - May cause sensitization by skin contact.

R68 - Possible risk of irreversible effects.

**Safety phrases** • S24 - Avoid contact with skin.

S37 - Wear suitable gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

## 2.3 Other Hazards

**CLP** 

• According to Regulation (EC) No. 1272/2008 (CLP) this material is considered

hazardous.

DSD/DPD

According to European Directive 1999/45/EC this preparation is considered dangerous.

#### **UN GHS**

**According to Third Revised Edition** 

### 2.1 Classification of the substance or mixture

**UN GHS** 

Skin Mild Irritation 3 - H316
 Skin Sensitization 1 - H317
 Eye Mild Irritation 2B - H320

### 2.2 Label elements

**UN GHS** 

### WARNING



Hazard statements • H316 - Causes mild skin irritation

H317 - May cause an allergic skin reaction

H320 - Causes eye irritation

# Precautionary statements

Prevention • P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.

P264 - Wash thoroughly after handling.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

Response • P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P321 - Specific treatment, see supplemental first aid information.

P363 - Wash contaminated clothing before reuse.

**Storage/Disposal** • P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

#### 2.3 Other hazards

**UN GHS** 

According to the Globally Harmonized System for Classification and Labeling (GHS) this
product is considered hazardous.

### **United States (US)**

According to OSHA 29 CFR 1910.1200 HCS

#### 2.1 Classification of the substance or mixture

**OSHA HCS 2012** 

Skin Sensitization 1 - H317
 Eye Mild Irritation 2B - H320

## 2.2 Label elements

**OSHA HCS 2012** 

#### **DANGER**





Hazard statements • Causes mild skin irritation - H316

May cause an allergic skin reaction - H317

Causes eye irritation - H320

# Precautionary statements

Prevention • Avoid breathing dust, fume, gas, mist, vapors and/or spray. - P261

Wash thoroughly after handling. - P264

Contaminated work clothing should not be allowed out of the workplace. - P272 Wear protective gloves/protective clothing/eye protection/face protection. - P280

Response • IF ON SKIN: Wash with plenty of soap and water. - P302+P352

If skin irritation or rash occurs: Get medical advice/attention. - P333+P313

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if

present and easy to do. Continue rinsing. - P305+P351+P338 If eye irritation persists: Get medical advice/attention. - P337+P313 Specific treatment, see supplemental first aid information. - P321

Wash contaminated clothing before reuse. - P363

**Storage/Disposal** • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations. - P501

### 2.3 Other hazards

**OSHA HCS 2012** 

• Under United States Regulations (29 CFR 1910.1200 - Hazard Communication Standard), this product is considered hazardous.

# Canada

**According to WHMIS** 

### 2.1 Classification of the substance or mixture

**WHMIS** 

• Other Toxic Effects - D2B

### 2.2 Label elements

**WHMIS** 



Other Toxic Effects - D2B

### 2.3 Other hazards

**WHMIS** 

• In Canada, the product mentioned above is considered hazardous under the Workplace

### 2.4 Other information

NFPA



# Section 3 - Composition/Information on Ingredients

#### 3.1 Substances

#### 3.2 Mixtures

	Hazardous Components								
<b>Chemical Name</b>	Identifiers	%(weight)	LD50/LC50	Classifications According to Regulation/Directive	Comments				
Glyoxal	CAS:107-22-2 EC Number:203- 474-9 EINECS:203-474- 9	9.7% TO 9.9%		WHMIS: UN GHS: Acute Tox. 4 (Inhalation); Muta. 2; Eye Irrit. 2A; Skin Irrit. 2; Skin Sens. 1 EU DSD/DPD: Harmful(Xn); Irritant(Xi); Mutagen 3(Muta.Cat.3); R20; R36/38; R43; R68 EU CLP: OSHA HCS 2012:					

#### Key to abbreviations

= See Section 16 for full text of R phrases

See Section 11 for Toxicological Information.

### **Section 4 - First Aid Measures**

### 4.1 Description of first aid measures

Inhalation

• IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration and call 911 or emergency medical service.

Skin

 IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

Eye

• IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Ingestion

• If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Rinse mouth. Never give anything by mouth to an unconscious person. If large quantities are swallowed, call a physician immediately.

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

• Refer to Section 11 - Toxicological Information.

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

# **Section 5 - Firefighting Measures**

### 5.1 Extinguishing media

Suitable Extinguishing Media

• SMALL FIRES: Dry chemical, CO2, water spray or regular foam. LARGE FIRE: Water spray, fog or regular foam.

**Unsuitable Extinguishing** 

• No data available

#### Media

**Firefighting Procedures** 

 LARGE FIRES: Use extinguishing agent suitable for type of surrounding fire. Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

Keep unauthorized personnel away. Ventilate closed spaces before entering.

### 5.2 Special hazards arising from the substance or mixture

**Unusual Fire and Explosion** 

**Hazards** 

No data available

**Hazardous Combustion** 

**Products** 

• Products of combustion include: carbon oxides (COx).

## 5.3 Advice for firefighters

• Fire fighters should wear complete protective clothing including self-contained breathing apparatus.

#### Section 6 - Accidental Release Measures

# 6.1 Personal precautions, protective equipment and emergency procedures

**Personal Precautions** 

 Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate enclosed areas.

**Emergency Procedures** 

• Ventilate closed spaces before entering.

### 6.2 Environmental precautions

• LARGE SPILLS: Prevent entry into waterways, sewers, basements or confined areas.

### 6.3 Methods and material for containment and cleaning up

Containment/Clean-up **Measures** 

• Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container.

#### 6.4 Reference to other sections

 Refer to Section 8 - Exposure Controls/Personal Protection and Section 13 -Disposal Considerations.

# Section 7 - Handling and Storage

### 7.1 Precautions for safe handling

Handling

• Use only with adequate ventilation. Use good safety and industrial hygiene practices.

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

Storage

• Keep container closed when not in use. Ventilate enclosed areas.

### 7.3 Specific end use(s)

Refer to Section 1.2 - Relevant identified uses.

# **Section 8 - Exposure Controls/Personal Protection**

# 8.1 Control parameters

	Exposure Limits/Guidelines									
	Result ACGIH Argentina Belgium Canada Alberta Canada B									
Glyoxal (107-22-2)		0.1 mg/m3 TV/A	0.1 mg/m3 TWA [CMP] (inhalable fraction, aerosol and vapor)	0.1 mg/m3 TWA (aerosol and vapor)	0.1 mg/m3 TWA	0.1 mg/m3 TWA (aerosol, inhalable, and vapour)				

Exposure Limits/Guidelines (Con't.)										
	Resul	t Ca	anada Manitoba		ada Nova Scotia	Canada Ontario		Canada Saskatchewan		Denmark
	Ceiling	ıs Not	established	Not established		Not established		Not established		0.2 ppm Ceiling; 0.5 mg/m3 Ceiling
Glyoxal (107-22-2)	TWAs	0.1 mg/m3 TWA (inhalable fraction and vapor)		0.1 mg/m3 TWA (inhalable fraction and vapor)		0.1 mg/m3 TWA (inhalable fraction and vapor)		0.1 mg/m3 TWA (inhalable fraction and vapour)		Not established
	STELs	Not established		Not established		Not established		0.3 mg/m3 STEL (inhalable fraction and vapour)		Not established
			Ex	posure	Limits/Gu	idelines (C	on't.)			
	R	esult	Finland	•	Por	tugal		Spain		Venezuela
Glyoxal (107-22-2)		VAs	0.02 mg/m3 TW <i>F</i>	Ą	0.1 mg/m3 TMP] (inhalal aerosol and	TWA [VLE- ble fraction,	ED] (it is partial o commer of this s	cialization or use	(inh	mg/m3 TWA [CAP alable fraction, osol and vapor)

#### **Exposure Control Notations**

#### Portugal

•Glyoxal (107-22-2): Carcinogens: (A4 - Not Classifiable as a Human Carcinogen) | Sensitizers: (Sensitizer)

•Glyoxal (107-22-2): Mutagens: (Category 3 Mutagen)

Argentina

•Glyoxal (107-22-2): Carcinogens: (A4 - Not classifiable as a human carcinogen) | Sensitizers: (Sensitizer)

Spain

•Glyoxal (107-22-2): Sensitizers: (sensitizer)

Venezuela

•Glyoxal (107-22-2): Ceilings: (A4 - Not Classified as a Carcinogen in Humans) | Sensitizers: (Sensitizer)

**ACGIH** 

•Glyoxal (107-22-2): Carcinogens: (A4 - Not Classifiable as a Human Carcinogen) | Sensitizers: (Sensitizer)

•Glyoxal (107-22-2): Carcinogens: (Category 3B (could be carcinogenic for man)) | Sensitizers: (skin sensitizer) | Skin: (skin notation)

### **Exposure Limits Supplemental**

•Glyoxal (107-22-2): TLV Basis - Critical Effects: (larynx metaplasia; upper respiratory tract irritation)

# 8.2 Exposure controls

**Engineering Measures/Controls** 

• Prevent vapor build up by providing adequate ventilation during and after

compound, inhalable fraction and vapor)

# **Personal Protective Equipment**

**Pictograms** 



#### Respiratory

• Do not breathe vapors or mists. In case of insufficient ventilation, wear suitable respiratory equipment.

Eye/Face

• Wear protective eyewear (goggles, face shield, or safety glasses).

**Hands** 

• Wear protective gloves - rubber or neoprene.

Skin/Body

• Wear protective clothing - apron or other impervious body coverings.

**General Industrial Hygiene** 

• Handle in accordance with good industrial hygiene and safety practice.

**Considerations** 

**Environmental Exposure Controls** • No data available

# **Section 9 - Physical and Chemical Properties**

# 9.1 Information on Physical and Chemical Properties

Material Description			
Physical Form	Liquid	Appearance/Description	Clear liquid.
Color	Colorless to pale yellow.	Odor	Mild
Odor Threshold	No data available	Physical and Chemical Properties	Not relevant
General Properties	•	·	
Boiling Point	No data available	Melting Point	Not relevant
Decomposition Temperature	No data available	рН	2.1
Specific Gravity/Relative Density	1 to 1.1 Water=1	Water Solubility	Miscible
Viscosity	No data available	Explosive Properties	Not relevant
Oxidizing Properties:	Not relevant		
Volatility	-	•	
Vapor Pressure	No data available	Vapor Density	No data available
Evaporation Rate	<= 1 Water = 1	VOC (Wt.)	9 to 10 %
Volatiles (Wt.)	100 %		
Flammability			
Flash Point	> 21 F (> 98.9 C)	UEL	No data available
LEL	No data available	Autoignition	No data available
Flammability (solid, gas)	Not relevant		
Environmental	-	•	
Half-Life	No data available	Octanol/Water Partition coefficient	No data available
Coefficient of water/oil distribution	No data available	Bioaccumulation Factor	No data available
Bioconcentration Factor	No data available	Biochemical Oxygen Demand BOD/BOD5	No data available
Chemical Oxygen Demand	No data available	Persistence	No data available
Degradation	No data available		

### 9.2 Other Information

• No additional physical and chemical parameters noted.

# Section 10: Stability and Reactivity

# 10.1 Reactivity

• No dangerous reaction known under conditions of normal use.

# 10.2 Chemical stability

• Stable under normal temperatures and pressures.

# 10.3 Possibility of hazardous reactions

No data available.

### 10.4 Conditions to avoid

• Incompatible materials.

# 10.5 Incompatible materials

• Strong oxidizing agents.

### 10.6 Hazardous decomposition products

 Hazardous decomposition products formed under fire conditions - carbon oxides (COx).

# **Section 11 - Toxicological Information**

# 11.1 Information on toxicological effects

GHS Properties	Classification
Acute toxicity	EU/CLP•

	OSHA HCS 2012• UN GHS•
Aspiration Hazard	EU/CLP• OSHA HCS 2012• UN GHS•
Carcinogenicity	EU/CLP• OSHA HCS 2012• UN GHS•
Germ Cell Mutagenicity	EU/CLP•Germ Cell Mutagenicity 2 OSHA HCS 2012•Germ Cell Mutagenicity 2 UN GHS•Germ Cell Mutagenicity 2
Skin corrosion/Irritation	EU/CLP• OSHA HCS 2012• UN GHS•Skin Mild Irritation 3
Skin sensitization	EU/CLP•Skin Sensitizer 1 OSHA HCS 2012•Skin Sensitizer 1 UN GHS•Skin Sensitizer 1
STOT-RE	EU/CLP• OSHA HCS 2012• UN GHS•
STOT-SE	EU/CLP• OSHA HCS 2012• UN GHS•
Toxicity for Reproduction	EU/CLP• OSHA HCS 2012• UN GHS•
Respiratory sensitization	EU/CLP• OSHA HCS 2012• UN GHS•
Serious eye damage/Irritation	EU/CLP• OSHA HCS 2012•Eye Mild Irritation 2B UN GHS•Eye Mild Irritation 2B

### **Potential Health Effects**

Inhalation

Acute (Immediate) • May cause respiratory irritation.

**Chronic (Delayed)** • No specific information available.

Skin

**Acute (Immediate)** • Causes mild skin irritation. May cause an allergic skin reaction.

**Chronic (Delayed)** • Repeated and prolonged exposure may cause irritation.

Eye

**Acute (Immediate)** • Causes eye irritation.

**Chronic (Delayed)** • Repeated and prolonged exposure may cause irritation.

Ingestion

**Acute (Immediate)** • May be harmful. May cause mild irritation.

**Chronic (Delayed)** • No specific information available.

# **Section 12 - Ecological Information**

# 12.1 Toxicity

• No data available

# 12.2 Persistence and degradability

• No data available

## 12.3 Bioaccumulative potential

No data available

# 12.4 Mobility in Soil

No data available

#### 12.5 Results of PBT and vPvB assessment

• No data available

#### 12.6 Other adverse effects

# **Section 13 - Disposal Considerations**

#### 13.1 Waste treatment methods

**Product waste** 

• Dispose of content in accordance with local, regional, national, and/or international regulations.

**Packaging waste** 

• Dispose of container in accordance with local, regional, national, and/or international regulations.

# **Section 14 - Transport Information**

	14.1 UN number	14.2 UN proper shipping name	14.3 Transport hazard class(es)	14.4 Packing group	14.5 Environmental hazards	
DOT	NDA	NDA	NDA	NDA	NDA	
IMO/IMDG	NDA	NDA	NDA	NDA	NDA	
IATA/ICAO	NDA	NDA	NDA	NDA	NDA	

14.6 Special precautions for user

• None specified.

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

• This product is provided only in non-bulk containers.

14.8 Other information

**DOT** • Not regulated.

**IMO/IMDG** • Not regulated.

IATA/ICAO • Not regulated.

# **Section 15 - Regulatory Information**

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

**SARA Hazard Classifications** • Acute

State Right To Know							
Component	CAS	NJ					
Glyoxal	107-22-2	Yes					

Inventory										
Component CAS Australia AICS Canada DSL China EU EINECS Japan ENCS									Japan ENCS	
Glyoxal	107-22-2 Yes Yes Yes Yes		Yes	Yes						
	Inventory (Con't.)									
Component CAS Korea KECL New Zealand Philippines PICCS TSCA						TSCA				
Glyoxal	107-22	-2	Yes		Yes		Yes		Yes	

#### **Australia**

#### Labor

Australia - List of Designated Hazardous Substances - Classification •Glyoxal 107-22-2 9.7% TO 9.9% Xn, Xi Muta.Cat.3 R68, R20, R36/38, R43

#### Canada

#### Labor

Canada - WHMIS - Classifications of Substances
•Glyoxal 107-22-2 9.7% TO 9.9% D2B, F
Canada - WHMIS - Ingredient Disclosure List
•Glyoxal 107-22-2 9.7% TO 9.9% 1 %

### **Europe**

#### Other

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Classification

•Glyoxal 107-22-2 9.7% TO 9.9% Xn; R20 Xi; R36/38 R43 Muta.Cat.3; R68

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Concentration Limits

•Glyoxal 107-22-2 9.7% TO 9.9% 10%<=C: Xi; R:36/38 10%<=C: Xn; R:20

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Labelling

•Glyoxal 107-22-2 9.7% TO 9.9% Xn R:20-36/38-43-68 S:(2)-36/37

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Notes - Substances and Preparations

•Glyoxal 107-22-2 9.7% TO 9.9% B

EU - CLP (1272/2008) - Annex VI - Table 3.2 - Safety Phrases

•Glyoxal 107-22-2 9.7% TO 9.9% S:(2)-36/37

EU - Existing Substance Regulation (793/93/EEC) - Evaluation of Existing HPV Chemicals (REPEALED)

•Glyoxal 107-22-2 9.7% TO 9.9%

### Germany

#### **Environment**

Germany - TA Luft - Types and Classes

•Glyoxal 107-22-2 9.7% TO 9.9% organic substance: 5.2.5, Class I

Germany - TA Luft - Emission Limits for Organic Substances

•Glyoxal 107-22-2 9.7% TO 9.9% 0.10 kg/h Mass flow (Class I); 20 mg/m3 Mass concentration (Class I)

Germany - Water Classification (VwVwS) - Annex 2 - Water Hazard Classes

•Glyoxal 107-22-2 9.7% TO 9.9% ID Number 1130, hazard class 1 - low hazard to waters

#### **Japan**

#### Labor

Japan - ISHL Mutagens - Existing Chemicals

•Glyoxal 107-22-2 9.7% TO 9.9% Notification No. 341 of June 6, 1994

#### Environment

Japan - Pollutant Release Transfer Register (PRTR) - Class 1 Substances •Glyoxal 107-22-2 9.7% TO 9.9% 84 >=1 %

#### Other

Japan - Chemical Substance Control Law (CSCL) - Examined Existing Chemical Substances
•Glyoxal 107-22-2 9.7% TO 9.9% Decomposable

Japan - Chemical Substance Control Law (CSCL) - Monitoring (Designated) Chemical Substances
•Glyoxal 107-22-2 9.7% TO 9.9% Type 2, Effective April 1, 2010

# 15.2 Chemical Safety Assessment

 No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

#### Section 16 - Other Information

#### Relevant Phrases (code & full text)

H316 - Causes mild skin irritation

H317 - May cause an allergic skin reaction

H320 - Causes eye irritation

P261 - Avoid breathing dust, fume, gas, mist, vapors and/or spray.

P272 - Contaminated work clothing should not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 - IF ON SKIN: Wash with plenty of soap and water.

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes.

Remove contact lenses, if present and easy to do. Continue rinsing.

P321 - Specific treatment, see supplemental first aid information.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P363 - Wash contaminated clothing before reuse.

P501 - Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

R20 - Harmful by inhalation.

R36/38 - Irritating to eyes and skin.

R43 - May cause sensitization by skin contact.

R68 - Possible risk of irreversible effects.

S24 - Avoid contact with skin.

S37 - Wear suitable gloves.

S45 - In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

**Classification method** for mixtures

• Calculation method.

**Last Revision Date** 

N/A

**Preparation Date** 

• 22 May 2013

Other Information

Approved by: Troy Bergstedt, Director of Chemical Research, (218) 628-2217 ext.142.

Liability

Disclaimer/Statement of • The information contained herein is based on data available to us and is believed to be correct. Since this information may have been obtained in part from independent laboratories or other sources not under direct supervision, no representation is made that the information is accurate, reliable, complete, or representative and Buyer may rely thereon only at the Buyer's risk. We make no guarantee that the health and safety precautions we have suggested will be adequate for all individuals and / or situations involving its handling and uses. No warranty is expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof. Vendor assumes no responsibility for injury to vendee or third person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet.