HURST SCIENTIFIC

Safety Data Sheet
Millers Elastic Stain

SECTION 1: Identification

1.1 GHS Product identifier

Product name	Millers Elastic Stain
Product number	MES-100M
Brand	Hurstchem

1.2 Other means of identification

Laboratory Reagent

1.4 Supplier's details

Name	Hurst Scientific
Address	2 Transit Place 6112 Forrestdale Wa Australia
Telephone	1300 778 068
email	sales@hurstscientific.com.au

1.5 Emergency phone number

Australian Poisons Information Centre 131 126
Australian Emergency Services 000

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

GHS classification in accordance with: UN GHS revision 8

- Eye damage/irritation, Cat. 1
- Flammable liquids, Cat. 3
- Corrosive to metals, Cat. 1
- Skin corrosion/irritation, Cat. 2

2.2 GHS label elements, including precautionary statements

Pictograms

Signal word	**Danger**

Hazard statement(s)

H318	Causes serious eye damage
H226	Flammable liquid and vapor
H290	May be corrosive to metals
H315	Causes skin irritation

Precautionary statement(s)

P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/ ...
P305+P354+P338	IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P317	Get medical help.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].
P370+P378	In case of fire: Use … to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container to …
P234	Keep only in original packaging.
P390	Absorb spillage to prevent material-damage.
P406	Store in a corrosive resistant/… container with a resistant inner liner.
P264	Wash … thoroughly after handling.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P321	Specific treatment (see … on this label).
P332+P317	If skin irritation occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

1. Ethanol

Concentration	<= 40 % (weight)
EC no.	200-578-6
CAS no.	64-17-5
Index no.	603-002-00-5

- Flammable liquids, Cat. 2

H225	Highly flammable liquid and vapor

2. Iron (III), chloride, hexahydrate

Concentration	< 3.5 % (weight)
EC no.	231-729-4
CAS no.	10025-77-1

3. RESORCINOL

Concentration	< 0.9 % (weight)
EC no.	203-585-2
CAS no.	108-46-3
Index no.	604-010-00-1

- Acute toxicity, oral, Cat. 4
- Skin corrosion/irritation, Cat. 2
- Serious eye damage/eye irritation, Cat. 2
- Hazardous to the aquatic environment, short-term (acute), Cat. 1

H302	Harmful if swallowed
H315	Causes skin irritation
H319	Causes serious eye irritation
H400	Very toxic to aquatic life
SCLs/M-factors/ATEs	*

4. HYDROCHLORIC ACID (<37%)

Concentration	< 0.5 % (weight)
EC no.	231-595-7
CAS no.	7647-01-0
Index no.	017-002-01-X

- Specific target organ toxicity following single exposure, Cat. 3
- Skin corrosion/irritation, Cat. 1B

H314	Causes severe skin burns and eye damage
H335	May cause respiratory irritation
SCLs/M-factors/ATEs	Skin Corr. 1B; H314: C ≥ 25 % Skin Irrit. 2; H315: 10 % ≤ C < 25 % Eye Irrit. 2; H319: 10 % ≤ C < 25 % STOT SE 3; H335: C ≥ 10 %

5. Victoria Blue B

Concentration	< 0.25 % (weight)
EC no.	219-943-6
CAS no.	2580-56-5

6. NEW FUCHSIN

Concentration	< 0.25 % (weight)
EC no.	221-831-7
CAS no.	3248-91-7

7. Crystal violet

Concentration	< 0.25 % (weight)
EC no.	208-953-6
CAS no.	548-62-9
Index no.	612-205-00-8

- Carcinogenicity, Cat. 1B
- Acute toxicity, oral, Cat. 4
- Serious eye damage/eye irritation, Cat. 1
- Hazardous to the aquatic environment, short-term (acute), Cat. 1
- Hazardous to the aquatic environment, long-term (chronic), Cat. 1

H302	Harmful if swallowed
H318	Causes serious eye damage
H350	May cause cancer [route]
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

General advice	Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. First Aid Facilities: Maintain eyewash fountain in work area.
If inhaled	Remove from contaminated area. Apply artificial respiration if not breathing.
In case of skin contact	Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician
In case of eye contact	Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
If swallowed	Do not induce vomiting. Wash out mouth thoroughly with water. Seek immediate medical attention.

4.2 Most important symptoms/effects, acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of immediate medical attention and special treatment needed, if necessary

For advice, contact the National Poisons Information Centre Phone Australia 13 11 26 or a doctor.

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Specific hazards arising from the chemical

Ethanol: Carbon oxides

5.3 Special protective actions for fire-fighters
Fire fighters should wear full protective clothing and self-contained breathing apparatus (SCBA) operated in positive pressure mode. Fight fire from safe location.

Further information
Containers can build up pressure if exposed to heat and/or fire. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.3 Methods and materials for containment and cleaning up
ELIMINATE all ignition sources (no smoking, flares, sparks or flames) within at least 25m - All equipment used when handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours - Water spray may be used to knock down or divert vapour clouds. Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Use explosion-proof equipment. Keep away from sources of ignition No smoking.Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

1. Ethanol (CAS: 64-17-5)
TWA (Inhalation): 1000 ppm; 1880 mg/m3; Australia (AU/SWA)

2. Resorcinol (CAS: 108-46-3)
TWA (Inhalation): 10 ppm; 45 mg/m3; Australia (AU/SWA)

STEL (Inhalation): 20 ppm; 90 mg/m3; Australia (AU/SWA)

3. HYDROCHLORIC ACID (<37%) (CAS: 7647-01-0)
TWA (Inhalation): 5 Peak limitation ppm; 7.5 Peak limitation mg/m3; Australia (AU/SWA)

8.2 Appropriate engineering controls

Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, gas, etc.) below recommended exposure limits.f the engineering controls are not sufficient to maintain concentrations of vapours/mists below the exposure standards, suitable respiratory protection must be worn.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection
The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.

Skin protection
Clean impervious clothing should be worn. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals. Hand Protection: Ensure hand protection complies with AS 2161, Occupational protective gloves - Selection, use and maintenance.

Body protection
Suitable protective workwear, e.g. cotton overalls buttoned at neck and wrist is recommended. Chemical resistant apron is recommended where large quantities are handled.

Respiratory protection
If engineering controls are not effective in controlling airborne exposure then an approved respirator with a replaceable vapor/ mist filter should be used. Refer to relevant regulations for further information concerning respiratory protective requirements. Reference should be made to Australian Standards AS/ NZS 1715, Selection, Use and Maintenance of Respiratory Protective Devices; and AS/NZS 1716, Respiratory Protective Devices, in order to make any necessary changes for individual circumstances.

SECTION 9: Physical and chemical properties

Basic physical and chemical properties

Physical state	Liquid
Appearance	Dark blue to black liquid
Color	Dark blue to black
Odor	Alcohol like
Odor threshold	No data available.
Melting point/freezing point	No data available.
Boiling point or initial boiling point and boiling range	No data available.
Flammability	No data available.
Lower and upper explosion limit/flammability limit	No data available.
Flash point	Approx. 26°C
Explosive properties	No data available.
Auto-ignition temperature	No data available.
Decomposition temperature	No data available.
pH	No data available.
Kinematic viscosity	No data available.
Solubility	No data available.
Partition coefficient n-octanol/water (log value)	No data available.
Vapor pressure	No data available.
Evaporation rate	No data available.
Density and/or relative density	No data available.
Relative vapor density	No data available.

Particle characteristics
No data available.

SECTION 10: Stability and reactivity

10.1 Reactivity
Stable under normal conditions of storage and handling. Risk of ignition. Vapours may form explosive mixtures with air. Reacts violently with oxidizers

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Hazardous Polymerization: Will not occur.

10.4 Conditions to avoid
Direct sunlight. Extremely high or low temperatures. Open flame. Incompatible materials, ignition sources, excess heat, oxidizers.

10.5 Incompatible materials
Strong oxidizing agents, acids, alkali metals, ammonia, hydrazine, peroxides, sodium, acid anhydrides, calcium hypochlorite, chromyl chloride, nitrosyl perchlorate, bromine pentafluoride, perchloric acid, silver nitrate, mercuric nitrate, potassium-tert-butoxide, magnesium perchlorate, acid chlorides, platinum, uranium hexafluoride, silver oxide, iodine heptafluoride, acetyl bromide, disulfuryl difluoride, tetrachlorosilane + water, acetyl chloride, permanganic acid, ruthenium (VIII) oxide, uranyl perchlorate, potassium dioxide, most common metals, strong bases, metail oxides, amines, and carbonates.

10.6 Hazardous decomposition products
Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide, hydrogen chloride.

SECTION 11: Toxicological information

Information on toxicological effects

Acute toxicity
No data available.

Skin corrosion/irritation
Irritating to skin.

Serious eye damage/irritation
Causes serious eye damage. Eye contact will cause stinging, blurring,tearing, evere pain and chemical burns, resulting in possible blindness.

Respiratory or skin sensitization
No data available.

Germ cell mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive toxicity
No data available.

Summary of evaluation of the CMR properties
No data available.

Specific target organ toxicity (STOT) - single exposure
No data available.

Specific target organ toxicity (STOT) - repeated exposure
No data available.

Aspiration hazard
No data available.

Additional information

Ethanol: Stomach - Irregularities - Based on Human Evidence

Iron (III), chloride, hexahydrate: Oral, mouse: LD50 = 200 mg/kg;
Oral, rat: LD50 = 316 mg/kg;

RESORCINOL: *TOXICITY:
typ. dose mode specie amount unit other
LDLo orl hmn 29 mg/kg
LD50 orl rat 301 mg/kg
LDLo scu rat 400 mg/kg
LDLo ipr mus 250 mg/kg
LDLo scu mus 340 mg/kg
LDLo ivn dog 700 mg/kg
LDLo scu cat 110 mg/kg
LD50 skn rbt 3360 mg/kg
LDLo scu gpg 400 mg/kg
LDLo par frg 270 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:
THR: MUTATION data. An experimental +/- carcinogen and equivocal tumorigenic agent. HIGH via oral, subcutaneous and intraperitoneal routes. A skin and eye irritant. It is primarily a skin irritant. However, it can cause systemic poisoning by acting both as a blood and nerve poison. It may also cause injury to the eyes and dermatitis, particularly to those who are sensitive to it.

*CARCINOGENICITY:
Tumorigenic Data:
TDLo: skn-mus 4800 mg/kg/12W-I
Review: IARC Cancer Review: Animal Inadequate Evidence
IARC: Not classifiable as a human carcinogen (Group 3) [610]
Status: NTP Carcinogenesis Studies; on test, December 1983

*MUTAGENICITY:
Mutation Data:
mmo-sat 400 uL/plate cyt-hmn:oth 40 mg/L
mma-sat 20 umol/plate cyt-ham:ovr 1600 mg/L
cyt-hmn:lym 80 mg/L

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: Federal Register (1/19/89)
Final Limit: PEL-TWA 10 ppm; STEL 20 ppm [610]
ACGIH: TLV-TWA 10 ppm; STEL 20 ppm [610]
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): None
Flammability (F): 1
Reactivity (R): 0
F1: Materials that must be preheated before ignition can occur (see NFPA for details).
R0: Materials which are normally stable even under fire exposure conditions and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:
Skin and Eye Irritation Data:
skn-rbt 500 mg
eye-rbt 100 mg SEV
Standards and Regulations: DOT-Hazard: ORM-E; Label: None
DOT-IMO: Poison B; Label: St. Andrew's Cross
Review: Toxicology Review
Status: Reported in EPA TSCA Inventory, 1983
Meets criteria for proposed OSHA Medical Records Rule
EPA Genetic Toxicology Program, January 1984

From Sigma:

Hazard Codes Xn,N

Risk Statements 22-36/38-50

Safety Statements 26-61

RIDADR UN 2876 6.1/PG 3

WGK Germany 1

RTECS VG9625000

HYDROCHLORIC ACID (<37%): *TOXICITY:
typ. dose mode specie amount units other
LCLo ihl hmn 1300 ppm/30M
LCLo ihl hmn 3000 ppm/5M
LDLo unr man 81 mg/kg
LC50 ihl rat 3124 ppm/1H
LC50 ihl mus 1108 ppm/1H
LD50 ipr mus 1449 mg/kg
LD50 orl rbt 900 mg/kg
LCLo ihl rbt 4416 ppm/30M
LCLo ihl gpg 4416 ppm/30M
LCLo ihl mam 1000 mg/m3/2H

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION:

THR: A highly corrosive irritant to the eyes, skin and mucous membranes.
Mildly toxic by inhalation.

*CARCINOGENICITY: Not available

*MUTATION DATA: See RTECS printout for most current data
test lowest dose | test lowest dose
---------- ---------- | ---------- ----------
dnr-esc 25 ug/well | sln-dmg-ihl 100 ppm/24H
sln-dmd-orl 100 ppm | cyt-grh-par 20 mg
cyt-ham:lng 30 mmol/L |

*TERATOGENICITY: See RTECS printout for most current data
Reproductive Effects Data:
TCLo: ihl-rat 450 mg/m3/1H (1D pre)

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: Federal Register (1/19/89) and 29 CFR 1910.1000 Subpart Z
Transitional and Final Limits: PEL-Ceiling Limit 5 ppm [015,327,545,610]
ACGIH: TLV-Ceiling Limit 5 ppm [015,415,421,610]
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): 3
Flammability (F): 0
Reactivity (R): 0
H3: Materials extremely hazardous to health but areas may be entered
with extreme care (see NFPA for details).
F0: Materials that will not burn (see NFPA for details).
R0: Materials which are normally stable even under fire exposure conditions
and which are not reactive with water (see NFPA for details).

*OTHER TOXICITY DATA:
Skin and Eye Irritation Data:
eye-rbt 5 mg/30S rinse MLD
Review: Toxicology Review-3
Standards and Regulations: DOT-Hazard: Nonflammable gas; Label: Nonflammable
gas
DOT-Hazard: Corrosive material; Label: Corrosive
DOT-IMO: Flammable gas; Label: Nonflammable gas,
Corrosive
EPA Fifra 1988 Pesticide Subject to Registration or
Re-registration
Status: EPA Genetox Program 1988, Negative: Cell transform.-SA7/SHE
EPA TSCA Chemical Inventory, 1989
EPA TSCA Section 8(e) Status Report 8EHQ-0578-0146
EPA TSCA Test Submission (TSCATS) Data Base, April 1990
NIOSH Analytical Methods: see Acids, Inorganic, 7903
IDLH value: 100 ppm [346,371]

Crystal violet: *TOXICITY:
typ. dose mode specie amount unit other
LD50 orl rat 420 mg/kg
LD50 ipr rat 8900 ug/kg
LD50 orl mus 96 mg/kg
LD50 ipr mus 5100 ug/kg

LDLo ivn mus 20 mg/kg
LD50 orl dog 1000 mg/kg
LDLo orl cat 100 mg/kg
LD50 orl rbt 150 mg/kg
LD50 ipr rbt 5 mg/kg
LD50 idu rbt 160 mg/kg
LDLo orl gpg 100 mg/kg
LDLo ipr gpg 10 mg/kg

*AQTX/TLM96: Not available

*SAX TOXICITY EVALUATION: Not available

*CARCINOGENICITY: Not available

*MUTAGENICITY: Mutagenic data:
cyt-hmn:hla 500 ug/L dni-hmn:hla 10 umol/L
cyt-hmn:lym 500 ug/L mmo-omi 1 ppm
cyt-ham:ovr 500 ug/L dnd-esc 10 umol/L
dnd-man:lym 10 pph mmo-sat 100 ng/plate
cyt-mam:oth 500 ug/L
cyt-nml:oth 500 ug/l
dnr-esc: 100ng/well

*TERATOGENICITY: Not available

*STANDARDS, REGULATIONS & RECOMMENDATIONS:
OSHA: None
ACGIH: None
NIOSH Criteria Document: None
NFPA Hazard Rating: Health (H): None
Flammability (F): None
Reactivity (R): None

*OTHER TOXICITY DATA:
Skin and Eye Irritation Data:
skn-hmn 3 mg/3D-I MLD
skn-hmn 2 mg/2D-I MLD
skn-gpg 6 mg/3D-I
Status: Reported in EPA TSCA Inventory, 1980
Meets criteria proposed for OSHA Medical Records Rule

SECTION 12: Ecological information

Toxicity
No data available.

Persistence and degradability
No data available.

Bioaccumulative potential
No data available.

Mobility in soil
No data available.

Results of PBT and vPvB assessment
No data available.

Endocrine disrupting properties
No data available.

Other adverse effects
No data available.

SECTION 13: Disposal considerations

Disposal methods

Product disposal
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers.

Packaging disposal
Do not discharge this material into waterways, drains and sewers.

SECTION 14: Transport information

DOT (US)
UN Number: UN2924
Class: 3 (8)
Packing Group: III
Proper Shipping Name: Flammable liquids, corrosive, n.o.s.
Reportable quantity (RQ):
Marine pollutant:
Poison inhalation hazard:

IMDG
UN Number: UN2924
Class: 3 (8)
Packing Group: III
EMS Number:
Proper Shipping Name: Flammable liquids, corrosive, n.o.s.

IATA
UN Number: UN2924
Class: 3 (8)
Packing Group: III
Proper Shipping Name: Flammable liquids, corrosive, n.o.s.

SECTION 15: Regulatory information

SECTION 16: Other information

16.1 Further information/disclaimer
This SDS is prepared in accordance with the Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011). The information contained within is believed to be accurate at the date of preparation/review. Hurst Scientific makes no claims of the accuracy or completeness of the information and excludes all liability for any loss or damage related to the supply or use of the information in this material safety data

sheet. It is recommended the user make their own determinations as to the suitability of the information provided to the application in which the product is to be used.

16.2 Preparation information

References

1. Safe Work Australia, Preparation of Safety Data Sheets for Hazardous Chemicals Code of Practice, (2011).
2. Safe Work Australia, National Code of Practice for the Labelling of Workplace Hazardous Chemicals (2015).
3. Safe Work Australia, Workplace Exposure Standards for Airborne Contaminants (2013)
4. National Transport Commission Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code); Canprint: Canberra (2007), Volume 1, 7th Edition.
5. Standards Australia, Dangerous Goods Initial Emergency Response Guide: Australian Handbook (SAA/SNZ HB76); Homebush (2004).