Elementary, a Two Step Developer – Part A

Material Safety Data Sheet

Date of issue: 09/04/2024 Revision date: N/A Supersedes: N/A Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : White/cream powder
Substance name : Elementary, a Two Step Developer – Part A
Chemical name : N/A - Mixture
CAS-No : N/A - Mixture
Brand : Flic Film Inc.

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For photographic use only.
Recommended use : Photographic chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier

Flic Film Inc.
10B Morrison Road, Longview, Alberta,
Canada T0L 1HO
T +1-403-982-4272

1.4. Emergency telephone number

Emergency number : +1-403-982-4272

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture GHS classification

Based on sodium sulfite – greatest concentration

GHS Classification Not a hazardous substance or mixture.

GHS labelling

Hazard pictograms (GHS) : None required

Signal word (GHS) : None required
Hazard statements (GHS) : None required

Precautionary statements (GHS) : None required

Hazards not otherwise classified (HNOC)

None identified.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Multi-constituent

Name	Product identifier	% w/w
Sodium sulfite	(CAS-No.) 7757-83-7	85-95%
Hydroquinone / 1,4-Dihydroxybenzne / 1,4-Benzenediol	(CAS-No.) 123-31-9	5-10%
Metol / 4-Methylaminophenol sulfate / Bis(4-hydroxy-N-methlanilinium) sulfate	(CAS-No.) 55-55-0	2-5%

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. (show the label where possible). Show this safety data sheet to the doctor in attendance.

First-aid measures after inhalation : Remove to fresh air. Get medical attention immediately if symptoms occur.

First-aid measures after skin contact : Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

First-aid measures after eye contact : Rinse immediately with plenty of water, also under eyelids, for at least 15 minutes. Get medical attention.

First-aid measures after ingestion : Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : May cause irritation and burns.

Symptoms/effects after skin contact : May cause skin irritation or burns.

Symptoms/effects after eye contact : May causes severe eye irritation and redness to the eye lids, conjunctiva. There is potential for permanent and severe eye damage if not treated immediately.

Symptoms/effects after ingestion : Swallowing a small quantity may cause severe gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large quantities may cause ulceration, vomiting, shock and death.

Notes physician : Treat symptomatically.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

Negligible fire hazard due to non-combustible properties of the mixture.

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Oxides of sodium. Sulfur dioxide. Carbon dioxide. Carbon monoxide. Oxides of nitrogen (NO_x)

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions Protection during firefighting : Use water spray or fog for cooling exposed containers.
Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Avoid breathing dust. Avoid dust formation. Wash thoroughly after handling. Wear correct personal protective equipment. Ensure adequate ventilation.

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves. Dust mask.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Spills : Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering the area. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of dust build up. Avoid breathing dust. Avoid contact with skin and eyes. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in a cool, dry, well-ventilated area.

Incompatible products : Strong acids.

Incompatible materials : Store protected from moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component	Occupational Exposure Limits
Sodium sulfite	ACGIH TWA 5 mg/m³ (8 hour).
Hydroquinone	ACGIH TWA 1mg/m³ (8 hour).
Metol	Not listed.

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation. Material should be handled using local exhaust ventilation (LEV) or laboratory hood whenever possible.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Chemical resistant apron. Gloves. Protective clothing. Safety glasses. Dust mask.

Hand protection:

Wear protective gloves

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid.
Appearance	:	Powder / crystalline
Colour	:	White/off-white/Cream.
Odour	:	Slight sulfurous / acidic smell.
Odour threshold	:	No data available.
pH	:	No data available.
Melting point	:	No data available.
Freezing point	:	No data available.
Boiling point	:	No data available.
Flash point	:	No data available.
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	No data available.
Relative vapour density at 20 °	:	No data available.
C Relative density	:	No data available.
Specific gravity / density	:	No data available.
Molecular mass	:	N/A - Mixture.
Solubility	:	Soluble in cold water, hot water.
Auto-ignition temperature	:	No data available.
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Hygroscopic	:	No

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The mixture is stable.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Moisture can also hydrolyze mixture to liberate sulfur dioxide which is a highly irritating and corrosive gas. Adding strong acid to the material can generate sulfur dioxide which is highly irritating and corrosive gas.

10.4. Conditions to avoid

Direct sunlight. Possible emission of gaseous decomposition products may lead to a dangerous pressure build. Exposure to moisture. Elevated temperatures. Store protected from moisture.

10.5. Incompatible materials

Strong acids. Avoid strong acids to prevent generation of highly irritant and corrosive sulfur dioxide gas.

10.6. Hazardous decomposition products

Oxides of sodium. Sulfur dioxide. Carbon dioxide. Carbon monoxide. Oxides of nitrogen (NOx)

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact.

Acute toxicity : Oral: Harmful if swallowed.

Toxicological data	
Sodium sulfite	
LD50 Oral	2,610 mg/kg (rat)
LC50 Inhalation	>22 mg/l / 1 h (rat) >5.5 mg/l / 4h (rat)
LD50 Dermal	2,000 mg/kg (rat)
Hydroquinone	
LD50 Oral	298 mg/kg (rat)
LC50 Inhalation	Not listed.
LD50 Dermal	74,800 mg/kg (rabbit)
Metol	
LD50 Oral	1,578 mg/kg (rat)
LC50 Inhalation	Not listed.
LD50 Dermal	7.087 mg/kg (rabbit)

Skin corrosion/irritation : Causes skin irritation or burns.

Serious eye damage/irritation : Causes serious eye irritation or burns.

Respiratory or skin sensitization : May cause an allergic skin reaction. Sodium sulfite may cause severe or deadly allergic reactions in some asthmatics and sulfite sensitive individuals. Possible signs and symptoms of allergic reactions include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure and anaphylaxis. Repeated or prolonged contact may cause dermatitis.

Germ cell mutagenicity : Not classified as a mutagen.

Carcinogenicity : Not classified as a carcinogen.

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Based on available data, the classification criteria are not met. Harmful if swallowed.

Aspiration hazard : Not classified

Potential Adverse human health effects and Symptoms : The substance or mixture is not classified as specific target organ toxicant. Prolonged or chronic ingestion may cause bromism characterized by disturbances to the central nervous system.

Symptoms/effects after skin contact : May cause skin irritation and/or dermatitis.

Symptoms/effects after eye contact : May cause irreversible eye damage.

Symptoms/effects after ingestion. : Central nervous system depression. Diarrhea. Nausea. Vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life.

12.2. Persistence and degradability

Hypo Clearing Agent	
Persistence and degradability	The material is both inorganic and organic and is not believed to persist in the environment.

12.3. Bioaccumulative potential

Hypo Clearing Agent	
Bioaccumulative potential	This material is believed not to bioaccumulate.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local / national regulations. Dispose of contents / container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT) : Not applicable.

In accordance with DOT Transport document description

DOT Special Provisions (49 CFR 172.102) : No special provisions.

DOT Packaging Exceptions (49 CFR 173.xxx) : Not applicable

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit

DOT Vessel Stowage Location : A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel

Other information : No supplementary information available.

SECTION 15: Regulatory information

Canadian National Regulations

Elementary, a Two Step Developer – Part A
Not listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian IDL (Ingredient Disclosure List)

SECTION 16: Other information

Full text of H-phrases: None required

Elementary, a Two Step Developer – Part B

Material Safety Data Sheet

Date of issue: 09/05/2024 Revision date: N/A Supersedes: N/A Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : White/cream powder
Substance name : Elementary, a Two Step Developer – Part B
Chemical name : N/A - Mixture
CAS-No : N/A - Mixture
Brand : Flic Film Inc.

1.2. Recommended use and restrictions on use

Use of the substance/mixture : For photographic use only.
Recommended use : Photographic chemicals
Restrictions on use : Not for food, drug or household use

1.3. Supplier

Flic Film Inc.
10B Morrison Road, Longview, Alberta,
Canada T0L 1HO
T +1-403-982-4272

1.4. Emergency telephone number

Emergency number : +1-403-982-4272

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture GHS classification

Based on sodium sulfite – greatest concentration

GHS Classification Not a hazardous substance or mixture.

GHS labelling

Hazard pictograms (GHS) : None required

Signal word (GHS) : None required
Hazard statements (GHS) : None required

Precautionary statements (GHS) : None required

Hazards not otherwise classified (HNOC)

None identified.

2.3. Other hazards which do not result in classification

Other hazards not contributing to the classification : None under normal conditions.

2.4. Unknown acute toxicity (GHS)

Not applicable

SECTION 3: Composition/Information on ingredients

3.1. Substances

Substance type : Multi-constituent

Name	Product identifier	% w/w
Sodium sulfite	(CAS-No.) 7757-83-7	85-95%
Borax / sodium tetraborate	(CAS-No.) 1330-43-4	5-10%

Full text of hazard classes and H-statements : see section 16

3.2. Mixtures

Not applicable

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general : Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice. (show the label where possible). Show this safety data sheet to the doctor in attendance.

First-aid measures after inhalation : Remove to fresh air. Get medical attention immediately if symptoms occur.

First-aid measures after skin contact : Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.

First-aid measures after eye contact : Rinse immediately with plenty of water, also under eyelids, for at least 15 minutes. Get medical attention.

First-aid measures after ingestion : Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects : May cause irritation and burns.

Symptoms/effects after skin contact : May cause skin irritation or burns.

Symptoms/effects after eye contact : May causes severe eye irritation and redness to the eye lids, conjunctiva. There is potential for permanent and severe eye damage if not treated immediately.

Symptoms/effects after ingestion : Swallowing a small quantity may cause severe gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large quantities may cause ulceration, vomiting, shock and death.

Notes physician : Treat symptomatically.

4.3. Immediate medical attention and special treatment, if necessary

Obtain medical assistance.

SECTION 5: Fire-fighting measures

Negligible fire hazard due to non-combustible properties of the mixture.

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Foam. dry powder. Carbon dioxide. Water spray. Sand.

Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Oxides of sodium. Sulfur dioxide. Carbon dioxide. Carbon monoxide. Oxides of boron.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions Protection during firefighting : Use water spray or fog for cooling exposed containers.
Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
: Do not enter fire area without proper protective equipment, including respiratory protection.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Avoid contact with skin and eyes. Avoid breathing dust. Avoid dust formation. Wash thoroughly after handling. Wear correct personal protective equipment. Ensure adequate ventilation.

6.1.1. For non-emergency personnel

Protective equipment : Safety glasses. Protective clothing. Gloves. Dust mask.

Emergency procedures : Evacuate unnecessary personnel.

6.1.2. For emergency responders

Protective equipment : Equip cleanup crew with proper protection.

Emergency procedures : Ventilate area.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if liquid enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Spills : Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering the area. Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of dust build up. Avoid breathing dust. Avoid contact with skin and eyes. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.

Hygiene measures : Do not eat, drink or smoke when using this product. Wash exposed skin thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reuse.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep container closed when not in use. Store in a cool, dry, well-ventilated area.

Incompatible products : Strong acids.

Incompatible materials : Store protected from moisture.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component	Occupational Exposure Limits
Sodium sulfite	ACGIH TWA 5 mg/m³ (8 hour).
Borax	ACGIH TWA 2mg/m³ (8 hour) / ACGIH TWA 6mg/m³ (STEL)

8.2. Appropriate engineering controls

Appropriate engineering controls : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation. Material should be handled using local exhaust ventilation (LEV) or laboratory hood whenever possible.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Chemical resistant apron. Gloves. Protective clothing. Safety glasses. Dust mask.

Hand protection:

Wear protective gloves

Eye protection:

Chemical goggles or safety glasses

Respiratory protection:

Wear respiratory protection.

Other information:

Do not eat, drink or smoke during use.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid.
Appearance	:	Powder / crystalline
Colour	:	White/off-white/Cream.
Odour	:	Slight sulfurous / acidic smell.
Odour threshold	:	No data available.
pH	:	No data available.
Melting point	:	No data available.
Freezing point	:	No data available.
Boiling point	:	No data available.
Flash point	:	No data available.
Flammability (solid, gas)	:	Non flammable.
Vapour pressure	:	No data available.
Relative vapour density at 20 °	:	No data available.
C Relative density	:	No data available.
Specific gravity / density	:	No data available.
Molecular mass	:	N/A - Mixture.
Solubility	:	Soluble in cold water, hot water.
Auto-ignition temperature	:	No data available.
Decomposition temperature	:	No data available
Viscosity, kinematic	:	No data available
Viscosity, dynamic	:	No data available
Explosion limits	:	No data available
Explosive properties	:	No data available
Oxidizing properties	:	No data available
Hygroscopic	:	No

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

The mixture is stable.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Moisture can also hydrolyze mixture to liberate sulfur dioxide which is a highly irritating and corrosive gas. Adding strong acid to the material can generate sulfur dioxide which is highly irritating and corrosive gas.

10.4. Conditions to avoid

Direct sunlight. Possible emission of gaseous decomposition products may lead to a dangerous pressure build. Exposure to moisture. Elevated temperatures. Store protected from moisture.

10.5. Incompatible materials

Strong acids. Avoid strong acids to prevent generation of highly irritant and corrosive sulfur dioxide gas.

10.6. Hazardous decomposition products

Oxides of sodium. Sulfur dioxide. Carbon dioxide. Carbon monoxide. Oxides of boron.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Likely routes of exposure : Inhalation; Skin and eye contact.

Acute toxicity : Oral: Harmful if swallowed.

Toxicological data	
Sodium sulfite	
LD50 Oral	2,610 mg/kg (rat)
LC50 Inhalation	>22 mg/l / 1 h (rat) >5.5 mg/l / 4h (rat)
LD50 Dermal	2,000 mg/kg (rat)
Borax	
LD50 Oral	2,660 mg/kg (rat)
LC50 Inhalation	> 2 mg/m^3 (rat) 4 h
LD50 Dermal	2,000 mg/kg (rabbit)

Skin corrosion/irritation : Causes skin irritation or burns.

Serious eye damage/irritation : Causes serious eye irritation or burns.

Respiratory or skin sensitization : May cause an allergic skin reaction. Sodium sulfite may cause severe or deadly allergic reactions in some asthmatics and sulfite sensitive individuals. Possible signs and symptoms of allergic reactions include bronchoconstriction, sweating, flushing, hives, rapid heart rate, decreased blood pressure and anaphylaxis. Repeated or prolonged contact may cause dermatitis.

Germ cell mutagenicity : Not classified as a mutagen.

Carcinogenicity : Not classified as a carcinogen.

Reproductive toxicity : Not classified

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity – repeated exposure : Based on available data, the classification criteria are not met. Harmful if swallowed.

Aspiration hazard : Not classified

Potential Adverse human health effects and Symptoms : The substance or mixture is not classified as specific target organ toxicant. Prolonged or chronic ingestion may cause bromism characterized by disturbances to the central nervous system.

Symptoms/effects after skin contact : May cause skin irritation and/or dermatitis.

Symptoms/effects after eye contact : May cause irreversible eye damage.

Symptoms/effects after ingestion. : Central nervous system depression. Diarrhea. Nausea. Vomiting.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - water : Harmful to aquatic life.

12.2. Persistence and degradability

Hypo Clearing Agent	
Persistence and degradability	The material is inorganic and is not believed to persist in the environment.

12.3. Bioaccumulative potential

Hypo Clearing Agent	
Bioaccumulative potential	This material is believed not to bioaccumulate.

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information : Avoid release to the environment.

SECTION 13: Disposal considerations

13.1. Disposal methods

Waste disposal recommendations : Dispose in a safe manner in accordance with local / national regulations. Dispose of contents / container to comply with local, state and federal regulations.

Ecology - waste materials : Avoid release to the environment.

SECTION 14: Transport information

Department of Transportation (DOT) : Not applicable.

In accordance with DOT Transport document description

DOT Special Provisions (49 CFR 172.102) : No special provisions.

DOT Packaging Exceptions (49 CFR 173.xxx) : Not applicable

DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : No limit

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : No limit

DOT Vessel Stowage Location : A - The material may be stowed ‘‘on deck’’ or ‘‘under deck’’ on a cargo vessel and on a passenger vessel

Other information : No supplementary information available.

SECTION 15: Regulatory information

Canadian National Regulations

Elementary, a Two Step Developer – Part B
Not listed on the Canadian DSL (Domestic Substances List)
Not listed on the Canadian IDL (Ingredient Disclosure List)

SECTION 16: Other information

Full text of H-phrases: None required