

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

1.1 Product identifier

Product Name • **SubTHAT! Films (MW / MC / GW / GC)**

Product Description • Clear or white film

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

Relevant identified use(s) • Thermal transfer film

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

According to: Regulation (EC) No 1272/2008 (CLP)/REACH 1907/2006 [amended by 2015/830]

2.1 Classification of the substance or mixture

CLP • Skin Sensitization 1 - H317
Eye Irritation 2 - H319
EUH208 - Contains sensitizing substances. May produce an allergic reaction.

2.2 Label Elements

CLP

WARNING



Hazard statements • H317 - May cause an allergic skin reaction
H319 - Causes serious 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 • 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.
P302+P352 - IF ON SKIN: Wash with plenty of soap and water.
P333+P313 - If skin irritation or rash occurs: 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

CLP • No data available

UN GHS Revision 6

According to: UN Globally Harmonized System of Classification and Labelling of Chemicals (GHS): Sixth Revised Edition

2.1 Classification of the substance or mixture

UN GHS • Skin Sensitization 1
Eye Irritation 2
Hazardous to the aquatic environment Acute 3

2.2 Label elements

UN GHS

WARNING



Hazard statements • May cause an allergic skin reaction
Causes serious eye irritation
Harmful to aquatic life

Precautionary statements

Prevention • Avoid breathing dust, fume, gas, mist, vapors and/or spray.
Wash thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves/protective clothing/eye protection/face protection.

Response • 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.
IF ON SKIN: Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Specific treatment, see supplemental first aid information.
Wash contaminated clothing before reuse.

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

2.3 Other hazards

UN GHS • No data available

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
Eye Irritation 2

2.2 Label elements

OSHA HCS 2012

WARNING



- Hazard statements**
- May cause an allergic skin reaction
 - Causes serious eye irritation

Precautionary statements

- Prevention**
- Avoid breathing dust, fume, gas, mist, vapors and/or spray.
 - Wash thoroughly after handling.
 - Contaminated work clothing should not be allowed out of the workplace.
 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response**
- **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.
 - **IF ON SKIN:** Wash with plenty of soap and water.
 - If skin irritation or rash occurs: Get medical advice/attention.
 - Specific treatment, see supplemental first aid information.
 - Wash contaminated clothing before reuse.

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

2.3 Other hazards

OSHA HCS 2012

- No data available

Canada

According to: WHMIS 2015

2.1 Classification of the substance or mixture

WHMIS 2015

- Skin Sensitization 1
- Eye Irritation 2

2.2 Label elements

WHMIS 2015

WARNING



- Hazard statements**
- May cause an allergic skin reaction
 - Causes serious eye irritation

Precautionary statements

- Prevention**
- Avoid breathing dust, fume, gas, mist, vapors and/or spray.
 - Wash thoroughly after handling.
 - Contaminated work clothing should not be allowed out of the workplace.
 - Wear protective gloves/protective clothing/eye protection/face protection.
- Response**
- **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.
 - **IF ON SKIN:** Wash with plenty of water and soap.
 - If skin irritation or rash occurs: Get medical advice/attention.
 - Specific treatment, see supplemental first aid information.
 - Wash contaminated clothing before reuse.

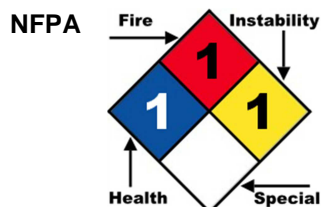
Storage/Disposal • Dispose of content and/or container in accordance with local, regional, national, and/or international regulations.

2.3 Other hazards

WHMIS 2015

- No data available

2.4 Other information



See Section 12 for Ecological Information.

Section 3 - Composition/Information on Ingredients

3.1 Substances

3.2 Mixtures

Composition					
Chemical Name	Identifiers	%	LD50/LC50	Classifications According to Regulation/Directive	Comments
Acrylate adhesion promoter		1% TO 5%		EU CLP: UN GHS Revision 6: Eye Dam. 1; Skin Irrit. 2; Skin Sens. 1 OSHA HCS 2012: Eye Dam. 1; Skin Irrit. 2; Skin Sens. 1 WHMIS 2015: Eye Dam. 1; Skin Irrit. 2; Skin Sens. 1	NDA
Peroxybenzoic acid, tert-butyl ester	CAS: 614-45-9 EINECS: 210-382-2	< 2%		EU CLP: Org. Perox. C; Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1; Aquatic Acute 1 UN GHS Revision 6: Org. Perox. C; Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1; Aquatic Acute 1 OSHA HCS 2012: Org. Perox. C; Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1 WHMIS 2015: Org. Perox. C; Acute Tox. 4; Skin Irrit. 2; Skin Sens. 1	NDA
Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	CAS: 104810-48-2	< 0.5%		EU CLP: Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 2 UN GHS Revision 6: Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 2 OSHA HCS 2012: Skin Sens. 1 WHMIS 2015: Skin Sens. 1	NDA
Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	CAS: 104810-47-1	< 0.5%		EU CLP: Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 2 UN GHS Revision 6: Skin Sens. 1; Aquatic Acute 1; Aquatic Chronic 2 OSHA HCS 2012: WHMIS 2015: Skin Sens. 1	NDA

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. Take off contaminated clothing and wash before reuse.
- 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 Media**
- No data available
- 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**
- Combustible material: may burn but does not ignite readily.
- Hazardous Combustion Products**
- Products of combustion include: carbon oxides (CO_x), nitrogen oxides (NO_x).

5.3 Advice for firefighters

- Wear positive pressure self-contained breathing apparatus (SCBA).

Section 6 - Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures

- Personal Precautions**
- No special precautions expected to be necessary if material is used under ordinary conditions and as recommended.
- Emergency Procedures**
- No emergency procedures are expected to be necessary if material is used under ordinary conditions as recommended.

6.2 Environmental precautions

- Prevent entry into waterways, sewers, basements or confined areas.

6.3 Methods and material for containment and cleaning up

- Containment/Clean-up Measures**
- No special precautions or procedures are necessary.

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 good safety and industrial hygiene practices.

7.2 Conditions for safe storage, including any incompatibilities

Storage • Store in a cool, dry place.

7.3 Specific end use(s)

• Refer to Section 1.2 - Relevant identified uses.

Section 8 - Exposure Controls/Personal Protection

8.1 Control parameters

8.2 Exposure controls

Engineering Measures/Controls • Local exhaust is recommended but not required. Provide adequate ventilation as necessary.

Personal Protective Equipment

Pictograms



Respiratory • Do not breathe vapors or mists.

Eye/Face • Avoid contact with product.

Hands • Minimize contact with product.

Skin/Body • Minimize contact with product.

General Industrial Hygiene Considerations • Handle in accordance with good industrial hygiene and safety practice.

Environmental Exposure Controls • No data available

Section 9 - Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Properties

Material Description			
Physical Form	Solid	Appearance/Description	Clear or translucent film.
Color	Colorless or white.	Odor	Slight acrylic odor.
Odor Threshold	No data available		
General Properties			
Boiling Point	Not relevant	Melting Point/Freezing Point	Not relevant
Decomposition Temperature	Not relevant	pH	Not relevant
Specific Gravity/Relative Density	No data available	Water Solubility	Insoluble
Viscosity	Not relevant	Explosive Properties	Not relevant
Oxidizing Properties:	Not relevant		
Volatility			
Vapor Pressure	Not relevant	Vapor Density	Not relevant
Evaporation Rate	Not relevant	VOC (Wt.)	0 %
Volatiles (Wt.)	0 %		
Flammability			
Flash Point	Not relevant	UEL	Not relevant
LEL	Not relevant	Autoignition	Not relevant
Flammability (solid, gas)	Combustible solid.		
Environmental			
Half-Life	No data available	Octanol/Water Partition coefficient	No data available
Bioaccumulation Factor	No data available	Bioconcentration Factor	No data available
Biochemical Oxygen Demand	No data available	Chemical Oxygen Demand	No data available

BOD/BOD5			
Persistence	No data available	Degradation	No data available

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

- Hazardous polymerization will not occur.

10.4 Conditions to avoid

- Excess heat.

10.5 Incompatible materials

- No data available

10.6 Hazardous decomposition products

- No decomposition is expected under normal storage and use conditions. Hazardous decomposition products formed under fire conditions - carbon oxides, nitrogen oxides.

Section 11 - Toxicological Information

11.1 Information on toxicological effects

Components		
Peroxybenzoic acid, tert-butyl ester (< 2%)	614-45-9	Acute Toxicity: Ingestion/Oral-Rat LD50 • 1012 mg/kg; Ingestion/Oral-Rat LD50 • 1012 mg/kg; Irritation: Skin-Rabbit • 0.1 mL 5 Day(s)-Intermittent • Moderate irritation; Skin-Rabbit • 0.1 mL 5 Day(s)-Intermittent • Moderate irritation

GHS Properties	Classification
Serious eye damage/Irritation	EU/CLP •Eye Irritation 2 UN GHS 6 •Eye Irritation 2 OSHA HCS 2012 •Eye Irritation 2 WHMIS 2015 •Eye Irritation 2
Skin sensitization	EU/CLP •Skin Sensitizer 1 UN GHS 6 •Skin Sensitizer 1 OSHA HCS 2012 •Skin Sensitizer 1 WHMIS 2015 •Skin Sensitizer 1

Route(s) of entry/exposure • Skin, Eye

Potential Health Effects

Inhalation

Acute (Immediate)

- May cause irritation.

Chronic (Delayed)

- No specific information available.

Skin

Acute (Immediate)

- May cause irritation. May cause an allergic skin reaction.

Chronic (Delayed)

- Repeated and prolonged exposure may cause sensitization.

Eye

Acute (Immediate)

- Causes serious eye irritation.

Chronic (Delayed)

- Repeated and prolonged exposure may be harmful.

Ingestion

Acute (Immediate)

- May cause 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

Potential Environmental Effects

- No data available.

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.

13.2 Other Information

- Avoid release to the environment. Dispose of wastes in an approved waste disposal facility.

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 and the IBC Code

- Not relevant.

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	MA	NJ	PA
Peroxybenzoic acid, tert-butyl ester	614-45-9	Yes	Yes	Yes
Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	No	No	No
Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	No	No	No

Inventory						
Component	CAS	Australia AICS	Canada DSL	China	EU EINECS	Japan ENCS
Peroxybenzoic acid, tert-butyl ester	614-45-9	Yes	Yes	Yes	Yes	Yes
Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	Yes	Yes	Yes	No	Yes
Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	Yes	Yes	Yes	No	Yes

Inventory (Con't.)					
Component	CAS	Korea KECL	New Zealand	Philippines PICCS	TSCA
Peroxybenzoic acid, tert-butyl ester	614-45-9	Yes	Yes	Yes	Yes
Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	Yes	Yes	Yes	Yes
Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	Yes	Yes	Yes	Yes

Denmark

Environment

Denmark - Advisory List for Self-Classification of Dangerous Substances

•Peroxybenzoic acid, tert-butyl ester	614-45-9	Xn; R22
•Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	Not Listed
•Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	Not Listed

Germany

Environment

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

•Peroxybenzoic acid, tert-butyl ester	614-45-9	ID Number 1105, hazard class 2 - hazard to waters
•Poly(oxy-1,2-ethanediyl), alpha-(3(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	Not Listed
•Poly(oxy-1,2ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	Not Listed

Hong Kong

Other

Hong Kong - Dangerous Goods - Category 10 - Other Dangerous Substances

• Peroxybenzoic acid, tert-butyl ester	614-45-9	
• Poly(oxy-1,2-ethanediyl), alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropoxy)	104810-47-1	Not Listed
• Poly(oxy-1,2-ethanediyl)-alpha-(3-(3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl)-1-oxopropyl)-omega-hydroxy-	104810-48-2	Not Listed

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)

- H317 - May cause an allergic skin reaction
- H319 - Causes serious eye irritation
- H402 - Harmful to aquatic life
- P261 - Avoid breathing dust, fume, gas, mist, vapours and/or spray.
- P264 - Wash thoroughly after handling.
- P272 - Contaminated work clothing should not be allowed out of the workplace.
- P273 - Avoid release to the environment.
- 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.
- EUH208 - Contains sensitizing substances. May produce an allergic reaction.

Classification method for mixtures

- Calculation method.

Last Revision Date

- N/A

Preparation Date

- 15 September 2017

Other Information

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

Disclaimer/Statement of Liability

- 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.