



### 3. COMPOSITION/INFORMATION ON INGREDIENTS

**Substance**

**Synonyms**

110CR; L50CR11.

**Chemical Family**

Fluoropolymer Laminated or Coated Polyimide Film.

Chemical Name	CAS No	Weight-%	Trade Secret
Polyimide Polymer	Proprietary	60 - 100	*
Silicon Dioxide	7631-86-9	10 - 30	*
Aluminum Hydroxide	21645-51-2	0.1 - 1	*
Polyfluorcarbon	Proprietary	<0.1	*
Dimethylformamide	68-12-2	<0.1	*
Dimethyl acetamide	127-19-5	<0.1	*

\*The exact percentage (concentration) of composition has been withheld as a trade secret.

### 4. FIRST AID MEASURES

**Description of first aid measures**

<b>Eye contact</b>	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
<b>Skin contact</b>	Wash off immediately with plenty of water for at least 15 minutes. Take off contaminated clothing. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	Remove to fresh air. If symptoms persist, call a physician.
<b>Ingestion</b>	Call a physician or poison control center immediately. Do NOT induce vomiting. Rinse mouth.

**Most important symptoms and effects, both acute and delayed**

**Symptoms** No information available.

**Indication of any immediate medical attention and special treatment needed**

**Note to physicians** Treat symptomatically.

### 5. FIRE-FIGHTING MEASURES

**Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

**Small Fire** Dry chemical or CO<sub>2</sub>.

**Large Fire** Water spray or fog. Move containers from fire area if you can do it without risk.

**Unsuitable extinguishing media** Do not use a solid water stream as it may scatter and spread fire.

**Specific hazards arising from the chemical**

Thermal decomposition can lead to release of irritating and toxic gases and vapors.

**Hazardous combustion products** Carbon oxides. Nitrogen oxides (NO<sub>x</sub>). Hydrogen fluoride. Carbonyl fluoride. Oxides of silicon. Aluminum oxides. Dimethylamine. Perfluoroisobutylene.

**Explosion data**

**Sensitivity to Mechanical Impact** Not sensitive.  
**Sensitivity to Static Discharge** Not sensitive.

**Protective equipment and precautions for firefighters**

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions, protective equipment and emergency procedures**

**Personal precautions** Ensure adequate ventilation, especially in confined areas.

**Environmental precautions**

**Environmental precautions** See section 12 for additional ecological information.

**Methods and material for containment and cleaning up**

**Methods for containment** Prevent further leakage or spillage if safe to do so.

**Methods for cleaning up** Sweep up and shovel into suitable containers for disposal.

**7. HANDLING AND STORAGE**

**Precautions for safe handling**

**Advice on safe handling** Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only in well-ventilated areas. Slip hazard if good housekeeping practices are not followed.

**Conditions for safe storage, including any incompatibilities**

**Storage Conditions** Keep in properly labeled containers. Keep containers tightly closed in a dry, cool and well-ventilated place. Protect from direct sunlight. Keep away from heat, sparks, flame and other sources of ignition (i.e., pilot lights, electric motors and static electricity).

**Incompatible materials** Finely powdered metals. Fluorinated compounds.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Control parameters**

**Exposure Guidelines**

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Silicon Dioxide 7631-86-9	-	TWA: 50 µg/m <sup>3</sup> excludes construction work, agricultural operations, and exposures that result from the processing of sorptive clays (vacated) TWA: 6 mg/m <sup>3</sup> <1% Crystalline silica TWA: 20 mppcf : (80)/(%) SiO <sub>2</sub> mg/m <sup>3</sup> TWA	IDLH: 3000 mg/m <sup>3</sup> TWA: 6 mg/m <sup>3</sup>
Aluminum Hydroxide 21645-51-2	TWA: 1 mg/m <sup>3</sup> respirable particulate matter	-	-
Dimethyl acetamide 127-19-5	TWA: 10 ppm S*	TWA: 10 ppm TWA: 35 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 35 mg/m <sup>3</sup> (vacated) S*	IDLH: 300 ppm TWA: 10 ppm TWA: 35 mg/m <sup>3</sup>

Dimethylformamide 68-12-2	TWA: 5 ppm S*	S* TWA: 10 ppm TWA: 30 mg/m <sup>3</sup> (vacated) TWA: 10 ppm (vacated) TWA: 30 mg/m <sup>3</sup> (vacated) S* S*	IDLH: 500 ppm TWA: 10 ppm TWA: 30 mg/m <sup>3</sup>
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**Appropriate engineering controls**

**Engineering Controls**                      Ensure adequate ventilation, especially in confined areas.

**Individual protection measures, such as personal protective equipment**

- Eye/face protection**                      Wear safety glasses with side shields (or goggles).
- Skin and body protection**                Wear protective gloves and protective clothing.
- Respiratory protection**                    If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

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

**9. PHYSICAL AND CHEMICAL PROPERTIES**

**Information on basic physical and chemical properties**

<b>Physical state</b>	Solid	<b>Odor</b>	Odorless
<b>Appearance</b>	film	<b>Odor threshold</b>	No information available
<b>Color</b>	light yellow		

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
pH	No information available	
Melting point / freezing point	> 350 °C 662 °F	
Boiling point / boiling range	No information available	
Flash point	No information available	
Evaporation rate	No information available	
Flammability (solid, gas)	No information available	
Flammability Limit in Air		
Upper flammability limit:	No information available	
Lower flammability limit:	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Relative density	No information available	
Water solubility	Insoluble in water	
Solubility in other solvents	No information available	
Partition coefficient	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

**Other Information**

Softening point	No information available
Molecular weight	No information available
VOC Content (%)	No information available
Density	No information available

**Bulk density** No information available

## 10. STABILITY AND REACTIVITY

### Reactivity

Stable under conditions of normal temperature and pressure.

### Chemical stability

Stable under conditions of normal temperature and pressure.

### Possibility of Hazardous Reactions

None under normal processing.

**Hazardous polymerization** Hazardous polymerization does not occur.

### Conditions to avoid

Extremes of temperature and direct sunlight.

### Incompatible materials

Finely powdered metals. Fluorinated compounds.

### Hazardous Decomposition Products

Carbon oxides. Nitrogen oxides (NOx). Hydrogen fluoride. Carbonyl fluoride. oxides of silicon. Aluminum oxides. Dimethylamine. Perfluoroisobutylene.

## 11. TOXICOLOGICAL INFORMATION

### Information on likely routes of exposure

**Product Information** Product does not present an acute toxicity hazard based on known or supplied information

**Inhalation** Inhalation of vapors in high concentration may cause irritation of respiratory system.

**Eye contact** Prolonged contact may cause redness and irritation.

**Skin contact** Prolonged contact may cause redness and irritation.

**Ingestion** Unlikely route of exposure.

Chemical Name	Oral LD50	Dermal LD50	Inhalation LC50
Silicon Dioxide 7631-86-9	= 7900 mg/kg ( Rat )	> 2000 mg/kg ( Rabbit )	> 2.2 mg/L ( Rat ) 1 h
Aluminum Hydroxide 21645-51-2	> 5000 mg/kg ( Rat )	-	-
Dimethyl acetamide 127-19-5	= 4263 mg/kg ( Rat )	> 2 g/kg ( Rat ) = 2240 mg/kg ( Rabbit )	= 8.81 mg/L ( Rat ) 1 h = 2475 ppm ( Rat ) 1 h
Dimethylformamide 68-12-2	= 2000 mg/kg ( Rat ) = 2800 mg/kg ( Rat )	= 1100 mg/kg ( Rat ) > 3.2 g/kg ( Rat )	-

### Information on toxicological effects

**Symptoms** No information available.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

**Sensitization** No information available.  
**Germ cell mutagenicity** No information available.  
**Carcinogenicity** No information available.  
**Reproductive toxicity** No information available.  
**STOT - single exposure** No information available.

**STOT - repeated exposure** No information available.  
**Aspiration hazard** No information available.

**Numerical measures of toxicity - Product Information**

**12. ECOLOGICAL INFORMATION**

**Ecotoxicity**

Chemical Name	Algae/aquatic plants	Fish	Crustacea
Silicon Dioxide 7631-86-9	440: 72 h Pseudokirchneriella subcapitata mg/L EC50	5000: 96 h Brachydanio rerio mg/L LC50 static	7600: 48 h Ceriodaphnia dubia mg/L EC50
Dimethyl acetamide 127-19-5	500: 72 h Desmodesmus subspicatus mg/L EC50	500: 96 h Leuciscus idus mg/L LC50 static	500: 48 h Daphnia magna mg/L EC50
Dimethylformamide 68-12-2	500: 96 h Desmodesmus subspicatus mg/L EC50	6300: 96 h Lepomis macrochirus mg/L LC50 9800: 96 h Oncorhynchus mykiss mg/L LC50 flow-through 10410: 96 h Pimephales promelas mg/L LC50 flow-through	7500: 48 h Daphnia magna mg/L EC50 6800 - 13900: 48 h Daphnia magna mg/L EC50 Static 8485: 48 h Daphnia magna mg/L EC50 semi-static

**Persistence and degradability**

These products are not expected to bio-degrade significantly in the environment.

**Bioaccumulation**

Bioaccumulative potential.

**Mobility in soil**

Chemical Name	Partition coefficient
Dimethylformamide 68-12-2	-1.028
Dimethyl acetamide 127-19-5	0.8

**Other adverse effects**

No information available

**13. DISPOSAL CONSIDERATIONS**

**Waste treatment methods**

**Disposal of wastes**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

**Contaminated packaging**

Do not reuse container.

**14. TRANSPORT INFORMATION**

**DOT** Not regulated  
**UN/ID no** Not regulated  
**Hazard Class** Not regulated  
**Subsidiary class** Not regulated  
**Packing Group** Not regulated

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<b>Reportable Quantity (RQ)</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Emergency Response Guide Number</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Subsidiary class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Subsidiary class</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Subsidiary hazard class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Proper shipping name</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Subsidiary hazard class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>ERG Code</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Description</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Proper shipping name</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Subsidiary hazard class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>EmS-No</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Description</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>Classification code</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Labels</b>	Not regulated
<b>UN/ID no</b>	Not regulated
<b>Hazard Class</b>	Not regulated
<b>Packing Group</b>	Not regulated
<b>Classification code</b>	Not regulated
<b>Tunnel restriction code</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Labels</b>	Not regulated
<b>UN Number</b>	Not regulated
<b>Hazard Class</b>	Not regulated

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<b>Packing Group</b>	Not regulated
<b>Classification code</b>	Not regulated
<b>Special Provisions</b>	Not regulated
<b>Hazard label(s)</b>	Not regulated
<b>Limited quantity (LQ)</b>	Not regulated
<b>Transport category</b>	Not regulated
<b>Ventilation</b>	Not regulated
<b>Equipment Requirements</b>	Not regulated

**15. REGULATORY INFORMATION**

**International Inventories**

<b>TSCA</b>	This is an article and is not subject to the requirements of TSCA. The polymer(s) in this product meet the criteria of the TSCA Polymer Exemption as set forth at 40 CFR 723.259(e)(2). Polymers reviewed and certified under the TSCA Polymer Exemption are not added to the TSCA inventory. Companies, other than Kaneka North America LLC., seeking to manufacture or import the same polymer are obligated to create their own Polymer Exemption Review Certification prior to engaging in manufacturing or import.
<b>DSL/NDSL</b>	Does not comply
<b>ENCS</b>	Does not comply

**Legend:**

- TSCA** - United States Toxic Substances Control Act Section 8(b) Inventory
- DSL/NDSL** - Canadian Domestic Substances List/Non-Domestic Substances List
- EINECS/ELINCS** - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
- ENCS** - Japan Existing and New Chemical Substances
- IECSC** - China Inventory of Existing Chemical Substances
- KECL** - Korean Existing and Evaluated Chemical Substances
- PICCS** - Philippines Inventory of Chemicals and Chemical Substances
- AICS** - Australian Inventory of Chemical Substances

**US Federal Regulations**

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

**SARA 311/312 Hazard Categories**

<b>Acute health hazard</b>	No
<b>Chronic Health Hazard</b>	No
<b>Fire hazard</b>	No
<b>Sudden release of pressure hazard</b>	No
<b>Reactive Hazard</b>	No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

**CERCLA**

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Chemical Name	Hazardous Substances RQs	CERCLA/SARA RQ	Reportable Quantity (RQ)
Dimethylformamide 68-12-2	100 lb	-	RQ 100 lb final RQ RQ 45.4 kg final RQ

**US State Regulations**

**California Proposition 65**

This product contains the following Proposition 65 chemicals at residual levels.

Chemical Name	California Proposition 65



Silicon Dioxide - 7631-86-9	Carcinogen
Dimethyl acetamide - 127-19-5	Carcinogen Developmental Male Reproductive
Dimethylformamide - 68-12-2	Carcinogen

**U.S. State Right-to-Know Regulations**

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Dimethyl acetamide 127-19-5	X	X	X
Dimethylformamide 68-12-2	X	X	X

**U.S. EPA Label Information**

EPA Pesticide Registration Number Not applicable

**16. OTHER INFORMATION, INCLUDING DATE OF PREPARATION OF THE LAST REVISION**

<b>NFPA</b>	Health hazards 1	Flammability 1	Instability 0	Physical and Chemical Properties -
<b>HMIS</b>	Health hazards 1	Flammability 1	Physical hazards 0	Personal protection X

Issue Date 30-Mar-2015  
Revision Date 17-Oct-2019

Revision Note  
No information available

**Disclaimer**

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**End of Safety Data Sheet**