

## MATERIAL SAFETY DATA SHEET

### Section 1. Product Identification

Product Code: **FO-15CR, UX-15CR**    **Imaging Film**

### Section 2. Supplier's Name and Address

Sharp Corporation  
 22-22 Nagaike-cho, Abeno-ku, Osaka, Japan  
 Local suppliers are listed below. Please contact the nearest supplier for additional information.

| (Country)      | (Name and Telephone Number)   |
|----------------|---|
| U.S.A.         | Sharp Electronics Corporation<br>Telephone number for information: 201-529-8200<br>Emergency telephone number : 1-800-255-3924    |
| Canada         | Sharp Electronics of Canada Ltd.<br>Telephone number for information: 416-890-2100<br>Emergency telephone number : 1-800-424-9300 |
| United Kingdom | Sharp Electronics(U.K.)Ltd.<br>Telephone number for information: 01923-474013   |

### Section 3. Ingredients

| Ingredients                      | CAS No.    | Proportion | OSHA PEL             | ACGIH TLV                 | Other Limits |
|----------------------------------|------------|------------|----------------------|---------------------------|--------------|
| Polyethylene terephthalate       | 25038-59-9 | 51.0 %     | -                    | -                         | -            |
| Carbon black                     | 1333-86-4  | 8.5 %      | 3.5mg/m <sup>3</sup> | 3.5mg/m <sup>3</sup>      | -            |
| Ethylene-vinyl acetate copolymer | 24937-78-8 | 3.1 %      | -                    | -                         | -            |
| Ester wax                        | 8015-86-9  | 5.6 %      | -                    | -                         | -            |
| Parraffin wax                    | 8002-74-2  | 12.5 %     | -                    | 2mg/m <sup>3</sup> (fume) | -            |
| Microcrystalline wax             | 63231-60-7 | 15.2 %     | -                    | -                         | -            |
| Modified wax                     | 8016-60-2  | 1.3 %      | -                    | -                         | -            |
| Polyester resin                  | 27923-68-8 | 1.3 %      | -                    | -                         | -            |
| Others                           | -          | 1.5 %      | -                    | -                         | -            |

### Section 4. Hazardous Identification (Emergency Overview)

This product is ink film for thermal transfer facsimile. "Ink film" is a thin film coated with ink. It is no special hazard under normal use condition.

### Section 5. Health Hazard Data

| Route(s) of Entry:                                   | Inhalation ?  | Skin ?         | Ingestion ?               |
|--|---|----------------|---------------------------|
|  | not applicable  | not applicable | Possible but very unusual |
| Health Hazards:                                      | The ingredients are not listed in ACGIH (1986) and OSHA (1989) except carbon black and paraffin wax   |                |                           |
| Carcinogenicity:                                     | In 1996 the IARC reevaluated carbon black as a Group 2B carcinogen (possible human carcinogen). This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any association between carbon black and lung tumors. |                |                           |
| Signs and Symptoms of Exposure:                      | not applicable  |                |                           |
| Medical Conditions Generally Aggravated by Exposure: | not applicable  |                |                           |
| Emergency and First Aid Procedures:                  | not applicable  |                |                           |

## MATERIAL SAFETY DATA SHEET

MSDS No. B-1006

**Section 6. Physical Chemical Characteristics**

|                       |                              |                  |                    |
|-----------------------|------------------------------|------------------|--------------------|
| Boiling/Melting Point | m.p. about 70 °C<br>for ink  | Specific Gravity | about 1            |
| Vapor Pressure        | not applicable               | Solubility       | negligible (water) |
| Vapor Density         | not applicable               | PH               | not applicable     |
| Evaporation Rate      | negligible                   | Viscosity        | not applicable     |
| Appearance            | thin film coated<br>with ink | Color            | black              |
| Odor                  | slight wax odor              |                  |                    |

**Section 7. Fire and Explosion Data**

|                                    |  |
|------------------------------------|--|
| Flash Point (Method Used):         | about 250 °C for ink                                 |
| Ignition Temperature:              | not applicable                                       |
| Flammable Limits:                  | not applicable (LEL); (UEL);                         |
| Extinguishing Media:               | CO <sub>2</sub> , water, dry chemicals and form etc. |
| Special Fire Fighting Procedure:   | none   |
| Unusual Fire and Explosion Hazard: | none   |
| Sensitivity to Mechanical Impact:  | no hazardous effect by mechanical impact             |
| Sensitivity to Static Charge:      | not applicable                                       |

**Section 8. Reactivity Data**

|                                       |                |
|---------------------------------------|----------------|
| Stability:                            | Stable         |
| Incompatibility (Materials to Avoid): | none           |
| Hazardous Decomposition:              | not applicable |
| Hazardous Polymerization:             | not applicable |

**Section 9. Precautions for Safe Handling and Use**

|   |  |
|---|--|
| Personal Protection Information (Respiratory, Eye Protection and Protective Glove): | not required   |
| Engineering Control/Ventilation:  | especially none  |
| Work/Hygienic Practice:   | especially none  |
| Steps to be taken in case of Spill or Leak:   | If rumple the product and wax layer peel off, sweep up or clean with vacuum cleaner. If it dirty skin, wash with water and soap. If it clothes, wash by suitable method.                                       |
| Waste Disposal Method:  | Dispose in an approved incinerator or contract with licensed chemical disposal agency.<br>Ensure conformity with governmental disposal regulations. (Dispose by the same method of ordinary plastic products.) |

**Section 10. Regulatory Information**

|                             |                |
|-----------------------------|----------------|
| NFPA Rating (U.S.A.):       | no information |
| WHMIS Legislation (Canada): | not controlled |
| Transport Information:      | no information |
| UN No.:                     | no information |

**Section 11. Other information**

|             |  |
|-------------|--|
| Reference : | IARC (1996) Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 65, Printing Process and Printing inks, Carbon Black and Some Nitro Compounds, Lyon, pp-149-261<br>H. Muhle, B. Bellmann, O. Creutzenberg, C. Dasenbrock, H. Ernst, R. Kilpper, J. C. Mackenzie, P. Morrow, U. Mohr, S. Takenaka, and R. Mermelstein (1991) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats.<br>Fundamental and Applied Toxicology 17, pp. 280-299 |
|-------------|--|

Please check the bottom righthand corner of the product number UX-3CR on the film box, or the final digit of the manufacturing number on the label at the beginning of the roll of ink film. If an "F" appears, please read pages 147 to 148. If an "F" does not appear, please read pages 149 to 150.

# S H A R P

Revised date : \_\_\_\_\_  
 Issued date : DEC.2.1999

## MATERIAL SAFETY DATA SHEET (1/2)

MSDS No B-1021

### Section 1. Product Identification

**Product Code :** UX-3CR Imaging Film

### Section 2. Supplier's Name and Address

Sharp Corporation

22-22 Nagaike-cho, Abeno-ku, Osaka, Japan

Local suppliers are listed below. Please contact the nearest supplier for additional information.

| (Country)      | (Name and Telephone Number)   |
|----------------|---|
| U.S.A.         | Sharp Document Network System of America<br>Telephone number for information: 1-800-237-4277<br>Emergency telephone number : 1-800-255-3924 |
| Canada         | Sharp Electronics of Canada Ltd.<br>Telephone number for information: 905-890-2100<br>Emergency telephone number : 1-800-424-9300           |
| United Kingdom | Sharp Electronics (U.K.) Ltd.<br>Telephone number for information: 01923-474013   |

### Section 3. Ingredients

| Ingredients                      | Cas No.    | Proportion | OSHA PEL              | ACGIH TLV             | Other Limits |
|----------------------------------|------------|------------|-----------------------|-----------------------|--------------|
| Carbon Black                     | 1333-86-4  | 9%         | 3.5 mg/m <sup>3</sup> | 3.5 mg/m <sup>3</sup> | -            |
| Paraffin Wax (fume)              | 8002-74-2  | 23%        | -                     | 2.0 mg/m <sup>3</sup> | -            |
| Polyethylene terephthalate       | 25038-59-9 | 50 - 55%   | -                     | -                     | -            |
| Ethylene-vinyl acetate copolymer | 24937-78-8 | 1 - 5%     | -                     | -                     | -            |
| Ester wax                        | 8015-86-9  | 1 - 5%     | -                     | -                     | -            |
| Polyester resin                  | 27923-68-8 | 1 - 5%     | -                     | -                     | -            |
| Synthetic wax                    | 68989-34-4 | 1 - 5%     | -                     | -                     | -            |
| Others                           | -          | 1 - 5%     | -                     | -                     | -            |

### Section 4. Hazardous Identification (Emergency Overview)

This product is ink film for thermal transfer facsimile.

"Ink film" is a thin film coated with ink.

It is no special hazard under normal use condition.

### Section 5. Health Hazard Data

| Route(s) of Entry : | Inhalation?    | Skin?          | Ingestion?                |
|---------------------|----------------|----------------|---------------------------|
|                     | Not applicable | Not applicable | Possible but very unusual |

**Health Hazards :** The ingredients are not listed in ACGIH(1986) and OSHA(1989) except carbon black and paraffin wax.

**Carcinogenicity :** In 1996 the IARC reevaluated carbon black as a Groupe 2B carcinogen (possible human carcinogen).

This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any association between carbon black and lung tumors.

**Signs and Symptoms of Exposure :** no data available

**Medical Conditions Generally Aggravated by Exposure :** no data available

**Emergency and First Aid Procedures :**

SKIN-----Wash away ink on skin

EYE-----Wash away water and consult a doctor promptly.

INHALATION---Not applicable

OTHERS-----No data available

# S H A R P

## MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. B-1021

### Section 6. Physical Chemical Characteristics

|                              |                           |                            |                   |
|------------------------------|---------------------------|----------------------------|-------------------|
| <b>Boiling/Melting Point</b> | No data available         | <b>Specific Gravity</b>    | No data available |
| <b>Vapor Pressure</b>        | No data available         | <b>Solubility in Water</b> | Negligible        |
| <b>Vapor Density</b>         | No data available         | <b>PH</b>                  | No data available |
| <b>Evaporation Rate</b>      | No data available         | <b>Viscosity</b>           | No data available |
| <b>Appearance</b>            | Thin film coated with ink | <b>Color</b>               | Black             |
| <b>Odor</b>                  | Slight wax odor           |                            |                   |

### Section 7. Fire and Explosion Data

|  |   |
|--|---|
| <b>Flash Point (Method Used)</b>         | : >150°C for ink  |
| <b>Ignition Temperature</b>              | : No data available   |
| <b>Flammable Limits</b>                  | : (LEL); No data available (UEL); No data available         |
| <b>Extinguishing Media</b>               | : Water mist, Foam, Dry powder, CO <sub>2</sub> gas, others |
| <b>Special Fire Fighting Procedure</b>   | : No data available   |
| <b>Unusual Fire and Explosion Hazard</b> | : None  |
| <b>Sensitivity to Mechanical Impact</b>  | : No hazardous effect by mechanical impact                  |
| <b>Sensitivity to Static Charge</b>      | : Not applicable  |

### Section 8. Reactivity Data

|   |                  |
|---|------------------|
| <b>Stability</b>                            | : Stable         |
| <b>Incompatibility (Materials to Avoid)</b> | : None           |
| <b>Hazardous Decomposition</b>              | : None           |
| <b>Hazardous Polymerization</b>             | : Will not occur |

### Section 9. Precautions for Safe Handling and Use

|   |   |
|---|---|
| <b>Personal Protection Information (Respiratory, Eye Protection and Protective Glove)</b> | : Hnad protection : Desireble in some cases                         |
| <b>Engineering Control / Ventilation</b>  | : No data available   |
| <b>Work / Hygienic Practice</b>   | : None  |
| <b>Steps to be taken in case of Spill or Leak</b>   | : If inadvertently released, rewind ribbon.                         |
| <b>Waste Disposal Method</b>  | : Disposal in accordance with local, state and federal regulations. |

### Section 10. Regulatory Information

|                                   |                  |
|-----------------------------------|------------------|
| <b>NFPA Rating (U.S.A.)</b>       | : No information |
| <b>WHMIS Legislation (Canada)</b> | : Not controlled |
| <b>Transport Information</b>      | : No information |
| <b>UN No.</b>                     | : Not applicable |

### Section 11. Other Information

References : IARC(1996) Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 65, Printing Process and Printing Inks, Carbon Black and Some Nitro Compounds, Lyon, pp-149-261  
H. Muhle, B. Bellmann, O. Creutzenberg, C. Dasenbrock, H. Ernst, R. Kilpper, J. C. Mackenzie, P. Morrow, U. Mohr, S. Takenaka, and R. Mermelstein (1991) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats. Fundamental and Applied Toxicology 17, pp. 280-299

# S H A R P

Date Revised: \_\_\_\_\_

Date Issued :Dec. 22, 1998

## MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. B-1006

### Section 1. Product Identification

Product Code : UX-3CR Imaging Film

### Section 2. Supplier's Name and Address

Sharp Corporation

22-22 Nagaike-cho, Abeno-ku, Osaka, Japan

Local suppliers are listed below. Please contact the nearest supplier for additional information.

| (Country)      | (Name and Telephone Number)   |
|----------------|---|
| U.S.A.         | Sharp Document Network System of America<br>Telephone number for information: 1-800-237-4277<br>Emergency telephone number : 1-800-255-3924 |
| Canada         | Sharp Electronics of Canada Ltd.<br>Telephone number for information: 905-890-2100<br>Emergency telephone number : 1-800-424-9300           |
| United Kingdom | Sharp Electronics (U.K.) Ltd.<br>Telephone number for information: 01923-474013   |

### Section 3. Ingredients

| Ingredients                      | CAS No.    | Proportion | OSHA PEL              | ACGIH TLV                  | Other Limits |
|----------------------------------|------------|------------|-----------------------|----------------------------|--------------|
| Polyethylene terephthalate       | 25038-59-9 | 51.0%      | -                     | -                          | -            |
| Carbon Black                     | 1333-86-4  | 8.5%       | 3.5 mg/m <sup>3</sup> | 3.5 mg/m <sup>3</sup>      | -            |
| Ethylene-vinyl acetate copolymer | 24937-78-8 | 3.1%       | -                     | -                          | -            |
| Ester wax                        | 8015-86-9  | 5.6%       | -                     | -                          | -            |
| Parraffin Wax                    | 8002-74-2  | 12.5%      | -                     | 2 mg/m <sup>3</sup> (fume) | -            |
| Microcrystalline wax             | 63231-60-7 | 15.2%      | -                     | -                          | -            |
| Modified wax                     | 8016-60-2  | 1.3%       | -                     | -                          | -            |
| Polyester resin                  | 27923-68-8 | 1.3%       | -                     | -                          | -            |
| Others                           | -          | 1.5%       | -                     | -                          | -            |

### Section 4. Hazardous Identification (Emergency Overview)

This product is ink film for thermal transfer facsimile. "Ink film" is a thin film coated with ink.

It is no special hazard under normal use condition.

### Section 5. Health Hazard Data

| Route(s) of Entry : | Inhalation?    | Skin?          | Ingestion?                |
|---------------------|----------------|----------------|---------------------------|
|                     | Not applicable | Not applicable | Possible but very unusual |

**Health Hazards** : The ingredients are not listed in ACGIH(1986) and OSHA(1989) except carbon black and paraffin wax.**Carcinogenicity** : In 1996 the IARC reevaluated carbon black as a Groupe 2B carcinogen (possible human carcinogen). This classification is given to chemicals for which there is inadequate human evidence, but sufficient animal evidence on which to base an opinion of carcinogenicity. The classification is based upon the development of lung tumors in rats receiving chronic inhalation exposures to free carbon black at levels that induce particle overload of the lung. Studies performed in animal models other than rats did not show any association between carbon black and lung tumors.**Signs and Symptoms of Exposure** : not applicable**Medical Conditions Generally Aggravated by Exposure** : not applicable**Emergency and First Aid Procedures** : not applicable

# S H A R P

Date Revised: \_\_\_\_\_

Date Issued : Dec. 22, 1998

## MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. B-1006

### Section 6. Physical Chemical Characteristics

|                              |                           |                            |                |
|------------------------------|---------------------------|----------------------------|----------------|
| <b>Boiling/Melting Point</b> | m.p. about 70 C for ink   | <b>Specific Gravity</b>    | about 1        |
| <b>Vapor Pressure</b>        | Not applicable            | <b>Solubility in Water</b> | Negligible     |
| <b>Vapor Density</b>         | Not applicable            | <b>PH</b>                  | Not applicable |
| <b>Evaporation Rate</b>      | Negligible                | <b>Viscosity</b>           | Not applicable |
| <b>Appearance</b>            | Thin film coated with ink | <b>Color</b>               | Black          |
| <b>Odor</b>                  | Slight wax odor           |                            |                |

### Section 7. Fire and Explosion Data

|  |  |
|--|--|
| <b>Flash Point (Method Used)</b>         | : about 250°C for ink                        |
| <b>Ignition Temperature</b>              | : Not applicable                             |
| <b>Flammable Limits</b>                  | : (LEL): Not applicable(UEL): Not applicable |
| <b>Extinguishing Media</b>               | : CO2, water , dry chemicals and form etc.   |
| <b>Special Fire Fighting Procedure</b>   | : None                                       |
| <b>Unusual Fire and Explosion Hazard</b> | : None                                       |
| <b>Sensitivity to Mechanical Impact</b>  | : No hazardous effect by mechanical impact   |
| <b>Sensitivity to Static Charge</b>      | : Not applicable                             |

### Section 8. Reactivity Data

|  |                  |
|--|------------------|
| <b>Stability</b>                           | : Stable         |
| <b>Incompatibility (Material to Avoid)</b> | : None           |
| <b>Hazardous Decomposition</b>             | : Not applicable |
| <b>Hazardous Polymerization</b>            | : Not applicable |

### Section 9. Precautions for Safe Handling and Use

|   |  |
|---|--|
| <b>Personal Protection Information (Respiratory, Eye Protection and Protective Glove)</b> | : Not required   |
| <b>Engineering Control / Ventilation</b>  | : Not required   |
| <b>Work / Hygienic Practice</b>   | : None   |
| <b>Steps to be taken in case of Spill or Leak</b>   | : If rumple the product and wax layer peel off, sweep up or clean with vacuum cleaner.   |
| <b>Waste Disposal Method</b>  | : If it dirty skin, wash with water and soap. If it clothes, wash by suitable method.<br>Dispose in an approved incinerator or contract with licensed chemical disposal agency.<br>Ensure conformity with governmental diaposal regulations. ( Dispose by the same method of ordinary plastic products.) |

### Section 10. Regulatory Information

|                                   |                  |
|-----------------------------------|------------------|
| <b>NFPA Rating (U.S.A.)</b>       | : No information |
| <b>WHMIS Legislation (Canada)</b> | : Not controlled |
| <b>Transport Information</b>      | : No information |
| <b>UN No.</b>                     | : No information |

### Section 11. Other Information

References : IARC(1996), IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 65, Printing Process and Printing Inks, Carbon Black and Some Nitro Compounds, Lyon, pp-149-261  
H. Muhle, B. Bellmann, O. Creutzenberg, C. Dasenbrock, H. Ernst, R. Kilpper, J. C. Mackenzie, P. Morrow, U. Mohr, S. Takenaka, and R. Mermelstein (1991) Pulmonary Response to Toner upon Chronic Inhalation Exposure in Rats. Fundamental and Applied Toxicology 17, pp. 280-299