Material Safety Data Sheets

AL / ZT Series

SOHO Copiers

June 2001

S H A R P

Date Revised: December 3 0, 1997
Date Issued :November 1, 1997

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00621

Section 1. Product Identification

Product :
ZT-81TD1 (Black Toner, **Blue Label**)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene acrylate copolymer	25767-47-9	> 89%	Not listed	Not listed	None
Carbon black	1333-86-4	< 5%	3.5mg/m^3	3.5mg/m^3	None
Triphenylmethane dye	29243-26-3	< 2%	Not listed	Not listed	None
Polyethylene	9003-07-0	< 2%	Not listed	Not listed	None
Iron oxide	1317-61-9	< 2%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LD50 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: December 30, 1997
Date Issued: November 1, 1997

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00621

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: No data available
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: December 30, 1997
Date Issued : July 1, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00631

Section 1. Product Identification

Product :
ZT-81TD1 (Black Toner, **White Label**)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene-Acrylate copolymer	25767-47-9	> 87%	Not listed	Not listed	None
Carbon black	1333-86-4	< 6%	3.5mg/m^3	3.5mg/m^3	None
Triphenylmethane dye	29243-26-3	< 2%	Not listed	Not listed	None
Polypropylene	9003-07-0	< 3%	Not listed	Not listed	None
Ferrite		< 2%	Not listed	Not listed	None
Iron oxide	1317-61-9				
Manganese oxide	1344-43-0				
Zinc oxide	1314-13-2				

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: December 30, 1997
Date Issued : July 1, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00631

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00632

Section 1. Product Identification

Product :
ZT-81TD2 (Red Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene-Acrylate copolymer	25767-47-9	> 85%	Not listed	Not listed	None
Titanium dioxide	13463-67-7	< 5%	10mg/m^3	10mg/m^3	None
Organic pigment	6535-46-2	< 6%	Not listed	Not listed	None
Organic ammonium salt	102561-46-6	< 2%	Not listed	Not listed	None
Polypropylene	9003-07-0	< 2%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : This material has been tested on "Acute oral toxicity " and "Ames test".
It does not represent a health hazard.

Carcinogenicity :

NTP?	IARC Monographs?	OSHA Regulated?
No	No	No

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

Emergency and First Aid Procedures :
Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00632

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.2
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Red
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : > 350^0C
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : None
Sensitivity to Static Charge : None

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

S H A R P

Date Revisedd : Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00633

Section 1. Product Identification

Product :
ZT-81TD3 (Blue Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene-Acrylate copolymer	25767-47-9	> 80%	Not listed	Not listed	None
Titanium dioxide	13463-67-7	< 10%	10mg/m^3	10mg/m^3	None
Organic pigment	147-14-8	< 6%	Not listed	Not listed	None
Organic ammonium salt	102561-46-6	< 2%	Not listed	Not listed	None
Polypropylene	9003-07-0	< 2%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes **Skin?** No **Ingestion?** Possible but very unusual.

Health Hazards : This material has been tested on "Acute oral toxicity " and "Ames test". It does not represent a health hazard.

Carcinogenicity : **NTP?** No **IARC Monographs?** No **OSHA Regulated?** No

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

Emergency and First Aid Procedures :
Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

S H A R P

Date Revised : Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00633

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.2
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Blue
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : > 350^0C
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : None
Sensitivity to Static Charge : None

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

S H A R P

Date Revised: Feb. 24, 1999
Date Issued :June 1, 1998

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00831

Section 1. Product Identification

Product :
AL-100TD (Black Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene-homopolymer	9003-53-6	> 40%	Not listed	Not listed	None
Styrene acrylate copolymer	29497-14-1	< 35%	Not listed	Not listed	None
Carbon black	1333-86-4	< 7%	3.5mg/m^3	3.5mg/m^3	None
Propylene-homopolymer	9003-07-0	< 5%	Not listed	Not listed	None
Wax	8002-74-2	< 5%	Not listed	Not listed	None
Iron oxide	1317-61-9	< 7%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LD50 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: Feb. 24, 1999
Date Issued: June 1, 1998

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00831

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NO_X
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: Feb. 24, 1999
Date Issued :Nov. 1, 1998

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-00841

Section 1. Product Identification

Product :
AR-200TD/AL-160TD (Black Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene acrylate copolymer	29497-14-1	> 88.0%	Not listed	Not listed	None
Carbon black	1333-86-4	< 6.0%	3.5mg/m^3	3.5mg/m^3	None
Iron oxide	1317-61-9	< 4.5%	Not listed	Not listed	None
Metal complex dye	109125-51-1 109125-50-0 84179-66-8	< 1.5% (total for all)	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LD50 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: Feb. 24, 1999
Date Issued: Nov. 1, 1998

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-00841

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NO_X
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

Date Revised: September 29, 1997
Date Issued :July 20, 1995

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0111

Section 1. Product Identification

Product :
ZT-60T1 (Black Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Carbon black	1333-86-4	5.0%	3.5mg/m^3	3.5mg/m^3	None
Styrene-Acrylate copolymer	27136-15-8	92.5%	Not listed	Not listed	None
Ammonium salt	56-37-1	2.0%	Not listed	Not listed	None
Color pigment	25869-98-1	0.5%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of this toner is over 5,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: September 29, 1997
Date Issued :July 20, 1995

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0111

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.26
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO, CO_2, and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: September 29, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0112

Section 1. Product Identification

Product :
ZT-60T2 (Red Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Titanium oxide	13463-67-7	15.5%	15mg/m^3	10mg/m^3	None
Styrene-Acrylate copolymer	27136-15-8	77.0%	Not listed	Not listed	None
Ammonium salt	56-37-1	2.5%	Not listed	Not listed	None
Organic pigment	5280-66-0	5.0%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute Oral Toxicity: LDL_0 of this toner is over 5.0g/kg

Carcinogenicity : **NTP?** No; **IARC Monographs?** No; **OSHA Regulated?** No

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : Accumulation of dust in the respiratory system.

Emergency and First Aid Procedures :
Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

S H A R P

Date Revised: September 29, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0112

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.25
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Red
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : No data available
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : No data available
Sensitivity to Static Charge : No data available

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO, CO_2, and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : No data available
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

Section 11. Other Information

This MSDS replaces MSDS F-0052 (SF-80T2), F-0062 (SF-720T2), and MSDS F-0072 (SF-750T2) dated 7/20/95.

S H A R P

Date Revised: September 29, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0113

Section 1. Product Identification

Product :
ZT-60T3 (Blue Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Titanium oxide	13463-67-7	10%	15mg/m^3	10mg/m^3	None
Styrene-Acrylate copolymer	27136-15-8	82%	Not listed	Not listed	None
Ammonium salt	56-37-1	4%	Not listed	Not listed	None
Organic pigment	147-14-8	4%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute Oral Toxicity: LDL_0 of this toner is over 5.0g/kg

Carcinogenicity : **NTP?** No; **IARC Monographs?** No; **OSHA Regulated?** No

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : Accumulation of dust in the respiratory system.

Emergency and First Aid Procedures :
Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

S H A R P

Date Revised: September 29, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0113

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.25
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Red
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : No data available
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : No data available
Sensitivity to Static Charge : No data available

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO, CO_2, and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : No data available
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

Section 11. Other Information

This MSDS replaces MSDS F-0052 (SF-80T2), F-0062 (SF-720T2), and MSDS F-0072 (SF-750T2) dated 7/20/95.

Date Revised: September 29,, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0114

Section 1. Product Identification

Product :
ZT-60T4 (Sepia Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Titanium oxide	13463-67-7	13.5%	15mg/m^3	10mg/m^3	None
Carbon black	1333-86-4	1.0%	3.5mg/m^3	3.5mg/m^3	None
Styrene-Acrylate copolymer	27136-15-8	80.0%	Not listed	Not listed	None
Organic pigment	58872-62-1	3.0%	Not listed	Not listed	None
Ammonium salt	56-37-1	2.5%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of this toner is over 5,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: September 29, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0114

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.25
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Sepia
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO, CO_2, and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

This MSDS replaces MSDS F-0054 (SF-80T4), F-0064 (SF-720T4) and MSDS F-0074(SF-750T4) issued 7/1/96.

S H A R P

Date Revised: August 1, 1996
Date Issued : September 1, 1992

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0121

Section 1. Product Identification

Product :
ZT-50TD1/ZT-50DC1 (Black Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Carbon black	1333-86-4	< 6%	3.5mg/m^3	3.5mg/m^3	None
Styrene-Acrylate copolymer	25767-47-9	> 90%	Not listed	Not listed	None
Nigrosine dye	8005-02-5	< 2%	Not listed	Not listed	None
Polyolefin wax	9003-07-0	< 2%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure : Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: August 1, 1996
Date Issued September 1, 1992

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0121

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: August 1, 1996
Date Issued : October 3, 1994

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-0411-1

Section 1. Product Identification

Product :
ZT-20TD1 (Black Toner)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Styrene-Acrylate copolymer	25767-47-9	89.5%	Not listed	Not listed	None
Carbon black	1333-86-4	5%	3.5mg/m^3	3.5mg/m^3	None
Polyethylene	9002-88-4	2.0%	Not listed	Not listed	None
Iron oxide	1317-61-9	1.5%	Not listed	Not listed	None
Organic pigment	29243-26-3	1.0%	Not listed	Not listed	None
Polypropylene	25085-53-4	1.0%	Not listed	Not listed	None

Section 4. (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of this toner is over 2,000mg/kg.
Mutagenicity --- The result of Ames test is negative.

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. Moreover, a two-year cancer bioassay using a typical toner preparation containing carbon black demonstrated no association between toner exposure and tumor development in rats.

Chronic Effect : In a study in rats of chronic inhalation exposure to a typical toner, a mild to moderate degree of lung fibrosis was observed in 92% of the rats in the high concentration (16mg/m^3) exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4mg/m^3) exposure group, but no pulmonary change was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: August 1, 1996
Date Issued : October 3, 1994

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-0411-1

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	1.1
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: December 30, 1997
Date Issued : November 1, 1997

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30621

Section 1. Product Identification

Product :
ZT-81TD1 (Black Developer, **Blue Label**)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 90%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 9%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.5%	3.5mg/m^3	3.5mg/m^3	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner, and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this developer has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: December 30, 1997
Date Issued : November 1, 1997

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30621

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	4.7
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: No data available.
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

Date Revised: December 30, 1997
Date Issued : July 1, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30631

Section 1. Product Identification

Product :
ZT-81TD1 (Black Developer, **White Label**)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 89%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 10%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.6%	3.5mg/m^3	3.5mg/m^3	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner, and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this developer has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: December 30, 1997
Date Issued : July 1, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30631

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 5
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30632

Section 1. Product Identification

Product :
ZT-81TD2 (Red Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 89%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 10%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes **Skin?** No **Ingestion?** Possible but very unusual.

Health Hazards : The toner, which is included in this developer, has been tested on "Acute oral toxicity " and "Ames test". It does not represent a health hazard.

Carcinogenicity : **NTP?** No **IARC Monographs?** No **OSHA Regulated?** No

Signs and Symptoms of Exposure :

Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye--- In case of contact, immediately flush eyes with water for 15 minutes

.

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30632

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 7.5
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Dark red
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : > 350^0C
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : None
Sensitivity to Static Charge : None

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30633

Section 1. Product Identification

Product :
ZT-81TD3 (Blue Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 89%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 10%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Based on our tests, it does not present an acute health hazard.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes **Skin?** No **Ingestion?** Possible but very unusual.

Health Hazards : The toner, which is included in this developer, has been tested on "Acute oral toxicity " and "Ames test". It does not represent a health hazard.

Carcinogenicity : **NTP?** No **IARC Monographs?** No **OSHA Regulated?** No

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

Emergency and First Aid Procedures :
Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye--- In case of contact, immediately flush eyes with water for 15 minutes

.

S H A R P

Date Revised: Feb. 1, 1997
Date Issued : July 8, 1996

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30633

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 7.5
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Dark blue
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used) : Not applicable
Ignition Temperature : > 350^0C
Flammable Limits : (LEL); Not applicable (UEL); Not applicable
Extinguishing Media : CO_2, dry chemical, foam or water
Special Fire Fighting Procedure : None
Unusual Fire and Explosion Hazard : This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact : None
Sensitivity to Static Charge : None

Section 8. Reactivity Data

Stability : Stable
Incompatibility (Material to Avoid) : None
Hazardous Decomposition : CO and NOx
Hazardous Polymerization : Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):
Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.
Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.) : Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada) : This product is not a controlled product.
Transport Information : This product is not a hazardous material.
UN No. : None allocated.

S H A R P

Date Revised: February 25, 1999
Date Issued : June 1, 1998

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30831

Section 1. Product Identification

Product :
AL-100TD (Black Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 90%	Not listed	Not listed	None
Styrene homopolymer	9003-53-6	< 4%	Not listed	Not listed	None
Styrene-Acrylate copolymer	29497-14-1	< 4%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.7%	3.5mg/m^3	3.5mg/m^3	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner, and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this developer has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: February 25, 1999
Date Issued : June 1, 1998

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30831

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	5.4
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: April 26, 1999
Date Issued : June 1, 1998

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-30841

Section 1. Product Identification

Product :
AL-200TD/AL-160TD (Black Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 92.5%	Not listed	Not listed	None
Styrene-Acrylate copolymer	29497-14-1	< 7.0%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.5%	3.5mg/m^3	3.5mg/m^3	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner, and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry :

Inhalation?	Skin?	Ingestion?
Yes	No	Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this developer has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: April 26, 1999
Date Issued : June 1, 1998

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-30841

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	About 7.3
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: August 1, 1996
Date Issued : September 1, 1992

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-3121

Section 1. Product Identification

Product :
ZT-50TD1/ZT-50DC1 (Black Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron Powder	7439-89-6	> 93%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 6%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.3%	3.5mg/m^3	3.5mg/m^3	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes **Skin?** No **Ingestion?** Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this eveloper has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: August 1, 1996
Date Issued September 1, 1992

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-3121

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 5
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: March 25, 1997
Date Issued : July 20, 1995

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-3181

Section 1. Product Identification

Product :
ZT-30TD1/ZT-30DC1 (Black Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Carbon black	1333-86-4	0.3%	3.5mg/m^3	3.5mg/m^3	None
Iron powder	7439-89-6	93.5%	Not listed	Not listed	None
Difluorethylene polymer	24937-79-9	0.5%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	5.5%	Not listed	Not listed	None
Nigrosine dye	8005-02-5	0.2%	Not listed	Not listed	None

Section 4. Hazardous Identification (Emergency Overview)

Developer is a black powder containing small amounts of toner, and possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** Yes; **Skin?** No; **Ingestion?** Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 4,100mg/kg.
Mutagenicity --- The toner, which is included in this developer has been tested on the Ames test. The result is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised:March 25, 1997
Date Issued :July 20, 1995

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-3181

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 5
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO, CO_2, and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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

S H A R P

Date Revised: August 1, 1996
Date Issued : October 3, 1994

MATERIAL SAFETY DATA SHEET (1/2)

MSDS No. F-3411-1

Section 1. Product Identification

Product :
ZT-20TD1 (Black Developer)

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 Telephone number for information: 1-800-237-4277 Emergency telephone number : 1-800-255-3924
Canada	Sharp Electronics of Canada Ltd. Telephone number for information: 905-890-2100 Emergency telephone number : 1-800-255-3924
United Kingdom	Sharp Electronics (U.K.) Ltd. Telephone number for information: 01923-474013

Section 3. Ingredients

Ingredients	CAS No.	Proportion	OSHA PEL	ACGIH TLV	Other Limits
Iron powder	7439-89-6	> 90%	Not listed	Not listed	None
Styrene-Acrylate copolymer	25767-47-9	< 10%	Not listed	Not listed	None
Carbon black	1333-86-4	< 0.5%	3.5mg/m^3	3.5mg/m^3	None

Section 4. (Emergency Overview)

Toner is a fine, black powder possessing no immediate hazard. There are no anticipated carcinogenic effects from exposure based on animal tests performed using toner. When used as intended according to instructions, studies do not indicate any symptoms of fibrosis will occur.

Section 5. Health Hazard Data

Route(s) of Entry : **Inhalation?** **Skin?** **Ingestion?**
Yes No Possible but very unusual.

Health Hazards : Acute oral toxicity --- LDL_0 of the toner which is included in this developer is over 2,000mg/kg.
Mutagenicity --- The toner, which is included in this developer, has been tested on the Ames test. Theresult is negative.

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. While there have been no studies to date using developer, a two-year cancer bioassay using a typical toner preparation containing carbon black (a small amount of toner is included in the developer mixture) demonstrated no association between toner exposure and tumor development in rats.

Signs and Symptoms of Exposure :
Minimal irritation to respiratory tract may occur as with exposure to any non-toxic dust.

Medical Conditions Generally Aggravated by Exposure : None

S H A R P

Date Revised: August 1, 1996
Date Issued : October 3, 1994

MATERIAL SAFETY DATA SHEET (2/2)

MSDS No. F-3411-1

Section 5. Health Hazard Data (Continued)

Emergency and First Aid Procedures :

Inhalation --- Remove to fresh air. If effects occur, consult medical personnel.
Eye --- In case of contact, immediately flush eyes with water for 15 minutes.

Section 6. Physical Chemical Characteristics

BoilingMelting Point	:	Not applicable	**Specific Gravity**	:	about 4.7
Vapor Pressure	:	Not applicable	**Solubility in Water**	:	Negligible
Vapor Density	:	Not applicable	**PH**	:	Not applicable
Evaporation Rate	:	Not applicable	**Viscosity**	:	Not applicable
Appearance	:	Fine powder	**Color**	:	Black
Odor	:	Odorless			

Section 7. Fire and Explosion Data

Flash Point (Method Used)	: Not applicable
Ignition Temperature	: > 350^0C
Flammable Limits	: (LEL); Not applicable (UEL); Not applicable
Extinguishing Media	: CO_2, dry chemical, foam or water
Special Fire Fighting Procedure	: None
Unusual Fire and Explosion Hazard	: This material has no unusual fire or explosion hazards.
Sensitivity to Mechanical Impact	: None
Sensitivity to Static Charge	: None

Section 8. Reactivity Data

Stability	: Stable
Incompatibility (Material to Avoid)	: None
Hazardous Decomposition	: CO and NOx
Hazardous Polymerization	: Will not occur.

Section 9. Precautions for Safe Handling and Use

Personal Protection Information (Respiratory, Eye Protection and Protective Glove):

Use of a dust mask is recommended when handling a large quantity of toner or during long term exposure, as with any non-toxic dust.

Engineering Control / Ventilation : Not required.
Work / Hygienic Practice : Inhalation should be minimized as with any non-toxic dust.
Steps to be taken in case of Spill or Leak : Sweep up or clean up with vacuum cleaner.
Waste Disposal Method : Waste material may be disposed under conditions which meet all federal, state and local environmental regulations.

Section 10. Regulatory Information

NFPA Rating (U.S.A.)	: Health = 1 Flammability = 1 Reactivity = 0
WHMIS Legislation (Canada)	: This product is not a controlled product.
Transport Information	: This product is not a hazardous material.
UN No.	: None allocated.

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