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TOSHIBA MATERIAL SAFETY DATA SHEET

Date of Preparation : December 25, 2000 MSDS : D3500KWJ3W
Date of Revised : December 13, 2002

SECTION 1 . CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name : D-3500 Black Developer
Used for : Toshiba Copiers, e-STUDIO 45, 35 and 28
Company Name : Toshiba TEC Corporation
Address : 1-1, Kanda nishikichou, Chiyoda-ku, Tokyo 101-8442, Japan
Telephone Number : +81-3-3438-6854
Manufacturer Name : (1) Toshiba America Business Solutions, Inc.
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(European Headquarter)
(4) Toshiba (Australia) Pty, Ltd.
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SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT(S)	CAS No.	wt.%
Iron oxide	1309-37-1	65-75
Manganese oxide	1344-43-0	20-25
Magnesium oxide	1309-48-4	1-4
Styrene acrylate copolymer	-------	2-6
Carbon black	1333-86-4	<1
	-------	Trade Secret

SECTION 3 HAZARDS IDENTIFICATION

Emergency Overview : If used as intended, the product does not present acute or chronic health hazard.
Physical Hazards : This product is not classified as flammable or combustible.
It will burn in case of fire.
Avoid contact with strong oxidizers such as chromate, bromate and nitrates.
Routes of Exposure : Inhalation, dermal contact, incidental ingestion

Inhalation	: Excessive inhalation may cause irritation of the nose, throat and respiratory tract.
Eye Contact	: Non-irritant.
Dermal Contact	: Non-irritant, non-sensitiser.
Ingestion	: Not currently known.
Chronic Effects	: See Section 11 Supplemental Health Information.
Carcinogenicity	: See Section 11 Supplemental Health Information.
Reproductive/Developmental	: Not identified.
Target Organs	: Prolonged breathing of high concentrations may cause adverse effects on the respiratory system.

Signs and Symptoms of Exposure
: Prolonged exposure to dusts of this product may irritate the respiratory system.

Medical Conditions Aggravated by Exposure to This Product
: Respiratory disorders, such as asthma, may be aggravated by prolonged exposure to high concentrations of this product.

SECTION 4 FIRST AID MEASURES

Eye Contact	: Immediately flush eyes with plenty of water for at least 15 minutes. If irritation persists, call a physician.
Skin Contact	: Wash with soap and water. Wash clothing before reuse. If irritation occurs or is persistent, seek medical attention.
Ingestion	: Dilute stomach contents with several glasses of water.
Inhalation	: Remove from exposure area to fresh air immediately. Contact a physician if there is any difficulty in breathing or other signs of distress.

SECTION 5 FIRE FIGHTING MEASURES

General Hazard	: Product will not burn in case of fire.
Flash Point	: Not applicable
Flammable Limits	: Not applicable
Autoignition Temperature	: Not applicable
Flammability classification	: Not applicable
Extinguishing Media	: Foam, halon, carbon dioxide, dry chemical & water fog.

Unusual Fire & Explosion Hazard
: Combustible powder. Dust of this product at sufficient concentrations can form explosive mixtures with air.

Fire Fighting Procedures : None

Hazardous Combustion Products
: Carbon monoxide, carbon dioxide and smoke.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Spills or Leaks	: Vacuum-clean spilled toner and carefully transfer into sealable waste container. If no vacuum-cleaner is available, sweep slowly to minimize generation of dust during clean-up. Residue can be removed with soap and cold water.

SECTION 7 HANDLING AND STORAGE

Handling : Avoid dust, keep away from ignition sources.

Prevention of Fire and Explosion

: This material is capable of creating a dust explosion.
Keep away from heat, sparks & flame.

Storage : Keep container in cool and dry area.

Hygienic Practices : Avoid inhalation and ingestion. Avoid getting in eyes, on skin or clothing. Wash hands thoroughly after handling, and before eating, drinking, or smoking.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limits

OSHA PELs (TWA)

as the product : 15mg/m^3 (Total dust)
5mg/m^3 (Respirable fraction)

Carbon black : 3.5 mg/m^3

Other substances : Not listed

ACGIH TLVs (TWA)

as the product : 10mg/m^3 (Total dust)
3mg/m^3 (Respirable fraction)

Carbon black : 3.5 mg/m^3

Other substances : Not listed

DFG-MAK (TWA)

as the product : 4mg/m^3 (Inhalable fraction)
1.5mg/m^3 (Respirable fraction)

All substances : Not listed

NOHSC (TWA)

All substances : Not listed

Engineering Controls : Maintain adequate ventilation.

Eye Protection : Not required under intended use.

Skin Protection : Not required under intended use.

Respiratory Protection : Not required under intended use.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Fine solid powder

Color : Black

Scent : Odorless

Melting Point : No data available

Specific Gravity(H2O=1) : 4.5 - 5.5

Vapor Pressure : Not applicable

Vapor Density (Air=1) : : Not applicable

Evaporation Rate : Not applicable

Solubility in Water : Negligible

pH Value : Not a water-based product, therefore not applicable.

SECTION 10 STABILITY AND REACTIVITY

Stability : Stable

Incompatibility : Not identified.

Hazardous Decomposition Products

: Carbon monoxide and carbon dioxide.

Hazardous Polymerization: : Will not occur.

SECTION 11 SUPPLEMENTAL HEALTH INFORMATION

Acute oral toxicity : LD50 is greater than 5,000mg/kg.
(This was the highest attainable mass.)
(Estimated from the constituent components.)

Acute inhalation : LC50(4H) is in excess of 5.31mg/l.
(This was the highest attainable concentration.)
(Estimated from the constituent components.)

Eye irritation : Non-irritant. (Estimated from the constituent components.)

Skin irritation : Non-irritant. (Estimated from the constituent components.)

Skin sensitization : Non-sensitiser. (Estimated from the constituent components.)

Mutagenicity : Negative in the Ames test.

Carcinogenicity : : In 1996, the IARC classified carbon black as a Group 2B carcinogen (possible human carcinogen).

Chronic Effects : : In a study in rats by 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 (16 mg/m^3)exposure group, and a minimal to mild degree of fibrosis was noted in 22% of the animals in the middle (4 mg/m^3) exposure group. These findings are attributed to "lung overloading", a general response to excessive amounts of any dust retained in the lungs for a prolonged period.

SECTION 12 ECOLOGICAL INFORMATION

This material has not been tested concerning environmental effects
(fish toxicity, bird toxicity, invertebrate toxicity, phyto-toxicity and environmental fate).

SECTION 13 DISPOSAL CONSIDERATION

Dispose of in accordance with local, state and federal regulation.
Empty plastic container may be recycled.

SECTION 14 TRANSPORTATION INFORMATION

Special Precautions : None

International Transport Information

UN Classification Number : Not applicable

DOT Identification Number : Not applicable

Domestic Transportation : Not applicable

Other Information : Not applicable

SECTION 15 REGULATORY INFORMATION

IARC : See section 11.

US/Canada Information

OSHA Hazard Communication Standard, 29CFR 1910. 1200
: Not regulated.

Toxic Substance Control Act (TSCA)
: All chemical substances in this product comply with all applicable rules or orders under TSCA.

RCRA (40 CFR 261) : Product or components not listed.

CERCLA/SARA Informatio : Not regulated.

NTP Annual Report on Carcinogens
: Not listed as an NTP carcinogen.

California Proposition 65 : Neither toner, or any of the components, are listed as chemicals known to the State of California to cause cancer or reproductive system effects.

Controlled Products Regulations(Canada)
: This product has been classified in accordance with the hazard criteria of the CPR.

Workplace Hazardous Materials Information System(Canada)
: No toxicology information available

Other State Regulations : Carbon black is listed in the New Jersey Right to Know List, Pennsylvania Hazardous Substance List, and Massachusetts Substance List.

U.S./Canada Label Statements
: LOW HAZARD FOR RECOMMENDED HANDLING. Minimize dust generation and accumulation. Use with adequate ventilation.

EU Information

Label Information According to Directives 67/548 EEC & 88/379 EEC

Symbol & Indication : Not required

Risk Phrase : Not required

Safety Advise Phrase : Not required

EEC Directive(76/548 EEC, 79/831 EEC, 92/32 EEC)
: All chemical substances in this product comply with all applicable rules or order under EEC Directive.

The Subject of Specific Provisions in Relation to Protection of Man or the Environment.Directive 76/769/EEC
: Not required

National requirement : : No specific regulations or restrictions.

SECTION 16 OTHER INFORMATION

National Fire Protection Association (NFPA) Classification :

Flammability : 0

Reactivity : 0

Health : 0

(0 = insignificant, 1 = slight)

Hazardous Materials Information Systems (HMIS) :

Red (Flammability) : 0

Yellow (Reactivity) : 0

Blue (Acute Effects) : 0

(0 = insignificant, 1 = slight)

Notice : Judgments as to the suitability of information herein for purchaser's purposes are necessarily purchaser's responsibility.
Therefore, although reasonable care has been taken in the preparation of such information, Toshiba Corporation extends no warranties, makes no representations, and assumes no responsibility as to the accuracy or suitability of such information for application to purchaser's intended purposes or for consequences of its use.

References :

IARC (1996) IARC Monographs on the Evaluation of the Carcinogenic Risks of Chemicals to Humans, Vol. 65, Printing Processes 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.

Abbreviation :
(1) OSHA PEL stands for Permissible Exposure Limit under Occupational Safety and Health Administration (USA).
(2) ACGIH TLV stands for Threshold Limit Value under American Conference of Governmental Industrial Hygienists (USA).
(3) DFG-MAK stands for Maximale Arbeitsplatzkonzentrationen under Deutsche Forschungsgemeinschaft.
(4) TWA stands for Time Weighted Average.
(5) IARC stands for International Agency for Research on Cancer.
(6) NTP stands for National Toxicology Program (USA).
(7) NIOSH stands for National Institute for Occupational Safety and Health (USA).
(8) DOT stands for Department of Transportation (USA).
(9) NOHSC stands for National Occupational Heath and Safety Commission (Australia).

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