



MATERIAL SAFETY DATA SHEET: 1996802403US
Date Prepared: July 4, 1996
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1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name:	KONICA DEVELOPER 1112	947-106	350g
	KONICA DEVELOPER 1015/1120/1212	947-123	600g
	KONICA DEVELOPER 1216/2223	947-226	650g

Company Name: Konica Business Technologies, Inc.
500 Day Hill Road, Windsor, CT 06095, U.S.A.

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Emergency Telephone Number: CHEMTREC: 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENTS	CAS#	wt. %

CARRIER	-----	94- 98
Ferrite	Iron Oxide 1309-37-1	Trade Secret
	Copper Oxide 1317-38-0	Trade Secret
	Zinc Oxide 1314-13-2	{12-17}
Acrylic resin	Trade Secret	Trade Secret
TONER	-----	2 - 6
Polyester resin	Trade Secret	Trade Secret
Carbon black	1333-86-4	(7-12)
Wax-1	Trade Secret	Trade Secret
Wax-3	Trade Secret	Trade Secret
Silica(Amorphous)	7631-86-9	(<1)
Titanium dioxide	13463-67-7	(<1)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

* Gray and granular(mean diameter is about 80um by volume). Odorless. *

POTENTIAL HEALTH EFFECTS

Eye Effects: None currently known.
Skin Effects: None currently known.
Ingestion Effects: None currently known.
Inhalation Effects:

None currently known. Minimal respiratory tract irritation may occur as with exposure to large amount of any non-toxic dust.

Chronic Effects/ Carcinogenicity:

No identified health effects. Carbon black is classified as a group 2B carcinogen (possible human carcinogen) by IARC. However, based on animal testing, it is presumed that there is no association between toner exposure and cancer.

4. FIRST AID MEASURES

Eye: Flush eyes lightly with plenty of water. If symptoms occur, get medical attention.

Skin: Wash with water and mild soap.

Ingestion: Wash out mouth with water. Drink one or two glasses of water. If symptoms occur, get medical attention.

Inhalation: Remove victim to fresh air. If symptoms occur, get medical attention.

5. FIRE FIGHTING MEASURES

Flash Point: Not applicable.

Method Used: Not applicable.

Flammable Limits: Not applicable.

Autoignition
Temperature: Not applicable.

Flammability
Classification: Not applicable.

Unusual Fire and
Explosion Hazard: Will burn if involved in a fire.

Extinguishing Media: Water spray, dry chemical, foam.

Fire Fighting:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. If fire is in the machine treat as an electric fire, do not use water or foam.

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

6. ACCIDENTAL RELEASE MEASURES

Spill and Leakage Procedures:
Wear personal protective equipment(See Section 8). Minimize the release of particulates. Sweep or vacuum material, place in a bag and hold for waste disposal. Use vacuum with HEPA filter. Vacuum should be electrically bonded and grounded to dissipate static electricity. To avoid dust generation, do not sweep dry.

7. HANDLING AND STORAGE

Handling:
Keep out of reach of children. Avoid contact with eyes.

Prevention of Fire and Explosion:
Keep away from heat, sparks, and flame.

Storage:
Keep container tightly closed. Store in a cool and dry place. Keep away from oxidizers.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Standards:

INGREDIENTS		ACGIH TLV		
		TWA	STEL	OSHA PEL
Ferrite	Iron Oxide	None established		None established
	Copper Oxide	None established		None established
	Zinc Oxide	10mg/m3		10mg/m3
Acrylic resin		None established		None established
		None established		None established
Polyester resin		None established		None established
		None established		None established
Carbon black		3.5mg/m3		3.5mg/m3
	Wax-1	None established		None established
Wax-3		None established		None established
		None established		None established
Silica(Amorphous)		10mg/m3		80mg/m3
	Titanium dioxide	10mg/m3		15mg/m3

Engineering Controls: Not required under normal conditions.

Respiratory Protection:

Not required under normal conditions. For use other than in normal operating procedures (such as in the event of large spill), goggles and respirators may be required.

Skin Protection: Not required under normal conditions.

Eye Protection: Not required under normal conditions.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Gray and granular(mean diameter is about 80um by volume)

Odor: Odorless.

pH: Not applicable.

Vapor Pressure: Not applicable.

Vapor Density: Not applicable.

Evaporation Rate: Not applicable.

Boiling Point: Not applicable.

Melting Point: Around 135°C {~275°F}(Softening point of toner)

Solubility: Insoluble in water.

Specific Gravity: 5.0

10. STABILITY AND REACTIVITY

Stability: Stable except above 200°C {392°F}.

Incompatibility: Oxidizers.

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

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION:

Product

Acute oral toxicity: LD50: >5000mg/kg[rat].

Inhalation: LC50: >1083mg/m3/4hrs[rat](This value is highest-
attainable with aerosol generation apparatus)
{toner}.

Eye irritation: None[rabbit]{toner}.

Skin irritation: None[rabbit]{toner}.

Skin sensitization: None[guinea pig]{toner}.

Chronic Effects/Carcinogenicity:

In a two-year inhalation study of chronic toxicity and carcinogenicity using a typical toner in rats, there were no lung changes at all in the lowest exposure level (1mg/m3), the most relevant level to potential human exposures. A minimal to mild degree of fibrosis was noted in 22% of the animals at the middle exposure level (4mg/m3), and a mild to moderate degree of fibrosis was observed in 92% of the rats at the highest exposure level (16mg/m3). The lung changes observed in the higher exposure groups are interpreted in terms of "lung overloading", a series of generic responses to the presence of large quantities of respirable, insoluble and relatively benign dusts retained for extended time periods in the lungs. Lung tumor frequency was unchanged among rats exposed to toner at the three exposure levels, and for air-only control rats.

Mutagenicity: Ames test: Negative.

Ingredients

Carbon black

Carcinogenicity:

The IARC reevaluated carbon black as a group 2B carcinogen (possible human carcinogen) in Monograph Volume 65 in 1996. This category has been given to carbon black, based on IARC's evaluations that there is inadequate evidence in humans for the carcinogenicity of carbon black, but there is sufficient evidence in experimental animals. The latter evaluation was made due to the development of lung tumors in rats receiving chronic inhalation exposure to free carbon black at levels that induce "lung overloading". However, studies performed in mice have not demonstrated an 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. (See chronic effects in this section.)

Silica {Amorphous}

Acute oral toxicity: LD50: 3160mg/kg[rat].

12. ECOLOGICAL INFORMATION: No data available.

13. DISPOSAL CONSIDERATIONS:

When disposing of the waste or recovered material, consult federal, state and/or local regulations for the proper disposal method.

14. TRANSPORT INFORMATION: DOT/TDG CLASS: Not Regulated.

15. REGULATORY INFORMATION:

OSHA Hazard Communication Standard, 29CFR 1910.1200:

Ingredients zinc oxide and carbon black are considered hazardous.

CERCLA(Comprehensive Environmental Response Compensation and Liability Act):
None.

SARA Title III (Superfund Amendments and Reauthorization Act)

302 Extreme Hazardous Substance: None.

311/312 Hazard Categories: None.

313 Reportable Ingredients: None.

TSCA(Toxic Substance Control Act):

All chemical substances in this product comply with all applicable rules or order under TSCA.

California Proposition 65:

This product contains no chemical substances subject to California Proposition 65.

16. OTHER INFORMATION:

HMIS Hazard Rating Health: 1, Flammability: 1, Reactivity: 0

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

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