



Material Safety Data Sheet (ANSI form)

Section1: Chemical Product and Company Identification

Product Name : Pro Toner 1357 RICOH/SAVIN/LANIER

General Use : The Image Formation of Printing Machine or Copier

MSDS Number : 828092

Company Name: Ricoh Company, Ltd.

Department : Environment Safety Center, Corporate Environment Division Address : 146-1 Nishisawada, Numazu-shi, Shizuoka-ken, 410-0007 Japan

Telephone : 055-920-1470, Japan

Number

Telefax Number : 055-920-1479, Japan E-mail : msdsinfo@nts.ricoh.co.jp

Section2: Composition, Information on Ingredients

Ingredients	Chemical	Contents	ACGIH	(TLV)		OSHA	(PEL)
CAS No./Common Name	Formula	(%)	TWA	STEL	С	TWA	С
Confidential Polyester Resin	Confidential	>80	N.A	N.A	N.A	N.A	N.A
1333-86-4	С	<15		N.A	N.A		N.A
Carbon Black			3.5mg/m3			3.5mg/m3	
8015-86-9 Wax	Not Identified	<10	N.A	N.A	N.A	N.A	N.A
13463-67-7	TiO2	0.1-1		N.A	N.A		N.A
Titan Oxide			10mg/m3			15mg/m3	
		_					

This product does not contain any of the following substances as ingredients. And if it contains any impurities, it does not exceed any of the thresholds of RoHS.

Cadmium, Hexavalent Chromium, Mercury, Lead, Polybrominated biphenyls (PBB), Polybrominated diphenyleters (PBDE).

Hazardous Ingredients Information

Chemical Name: Carbon Black

CAS Number 1333-86-4 **EEC Number** 215-609-9 OSHA Z-Tables (USA) ACGIH-TLV 3.5mg/m3 3.5mg/m3 NTP (USA) Not listed IARC Monographs Group 2B Not listed Symbol (EU) Not listed R-Phrase (EU) DFG-MAK (GER) III 3B OELs-TWA (Australia) : 3.0mg/m3

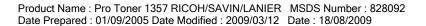
California Proposition 65 (USA) : Listed

Chemical Name: Titan Oxide

CAS Number 13463-67-7 **EEC Number** 236-675-5 OSHA Z-Tables (USA) 15mg/m3 ACGIH-TLV 10mg/m3 IARC Monographs NTP (USA) Not listed Group 2B Symbol (EU) Not listed R-Phrase (EU) Not listed DFG-MAK (GER) Not listed OELs-TWA (Australia): 10mg/m3

California Proposition 65 (USA) : Not listed

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Section3: Hazards Identification

Emergency Overview

HMIS Health: 1 Flammabilit: 1 Reactivity: 0 PPE:See section 8

NFPA Health: 1 Flammabilit: 1 Reactivity: 0

The Most Important Hazards

Adverse Human Health Effects:

There are no significant hazards expected with intended use.

Potential Health Effects

Primary Entry Routes :

Inhalation; Yes
Skin; Yes
Ingestion; Yes
Environmental Effects:

There are no significant hazards expected with intended use.

Physical and Chemical Hazards:

There are no significant hazards expected with intended use.

Specific Hazards:

Dust explosion (like most finely grained organic powders)

Main Symptoms:

Acute Inhalation Toxicity

Exposure to excessive amount of dust may cause physical irritation to respiratory tract.

Acute Oral Toxicity

Low acute toxicity in animal experiment.

Acute Eye Irritation

May cause slight transient irritation.

Acute Skin Irritation

May be non-irritant.

Sensitization

From test no apparent significant hazards are expected . (Only few cases reported on incidental allergy-related conjunctivitis or dermatitis.)

Chronic Effect

Slight pulmonary fibrosis has been reported in rats upon chronic inhalation exposure to a toner at 4mg/m3 every day for 2 years. No pulmonary change was found at 1mg/m3. These findings show that exposure to excessive amounts of powder may cause damage to lungs. However, normal use and handling of this product as intended, does not result in inhalation of excessive amounts of powder.

Carcinogenicity

Carbon black and titanium dioxide contained in this product are classified to Group 2B of IARC as the result of inhalation test in use of rat.

But oral/skin test does not show carcinogenicity.

The toner containing carbon black did not show carcinogenicity in chronic inhalation exposure test in use of rat.

In the animal experiment with very high concentration of titanium dioxide (excessive burden of rat's lungs clearance mechanism (overload phenomenon)), the rat alone showed lung tumor. Under a normal use practice, the concentration should be far lower than the above; and it is assumed that there is no such use.

Also, relation between respiratory disease and work exposure of titanium dioxide is not observed with epidemiological survey.

Medical Conditions Aggravated by Exposure

Not applicable

Classification of the Chemical Product

This mixture is not classified as dangerous.

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Section4: First Aid Measures

Inhalation:

Remove from exposure into fresh air and rinse mouth with water. Seek medical advice.

Skin Contact:

Wash thoroughly with soapy water.

Eye Contact:

Flush with a large amount of water until particles are removed. Seek medical advice.

Ingestion:

Drink several glasses of water to dilute ingested toner. Seek medical advice.

Immediate Medical Attention:

Immediate medical attention is not required.

Section5 : Fire Fighting Measures

Flash Point (degrees centigrade) : Not applicable
Burning Rate (mm/sec) : 0.223 or below
Autoignition Temperature (degrees : Not available

centigrade)

Flammable Limits % : LEL Not available UEL Not available

Extinguishing Media to Avoid:

Not applicable. Specific Hazards:

Can form explosive dust-air mixtures when finely dispersed in air.

Fire-Fighting Instructions / Specific Method:

No special fire protecting method is required. Sprinkling or fire extinguishers can be used.

Protection of Firefighters:

Wear gloves, glasses, a mask if necessary.

Section6: Accidental Release Measures

Personal Precautions:

Do not breathe in dust.

Environment Precautions:

Do not flush into sewers or watercourses.

Methods for Cleaning Up:

Confirm there is no source of fire and if there is a source, remove it. Sweep up spilled powder slowly and clean remainder with wet cloth.

Section7: Handling and Storage

Handling:

Technical Measures/Precautions

Not applicable

Safe Handling Advice

Do not handle in areas where there is wind or draught, this may cause dust to get into eyes.

Avoid breathing in dust.

Storage:

Technical Measures

Not applicable

Storage Conditions

Keep out of reach of children.

Store in dry, well-ventilated area, to maintain quality the temperature should not exceed 35degrees centigrade for a long time. Avoid direct sunlight.

Packaging material

Not applicable

Specific Use(s):

Image formation in printing machines or copiers.

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Section8: Exposure Controls/Personal Protection

Technical measures:

Use adequate ventilation. None required with intended use.

Control Parameters

Exposure Limit Value (I)

USA OSHA PEL (TWA) : 15mg/m3 (Total dust) 5.0mg/m3 (Respirable fraction) : 10mg/m3 (Inhalable fraction) ACGIH TLV (TWÀ) 3.0mg/m3 (Respirable fraction) 1.5mg/m3 (Respirable fraction) DFG MAK : 4.0mg/m3 (Total dust)

Personal Protection

Respiratory Protections (Specify Type)

None required in normal use. If the limit of exposure concentration is exceeded, use authorised

respirator. Eye Protection

Put on goggles if necessary.

Protective Gloves

Use vinyl or rubber gloves if necessary.

Protective Clothing or Equipment

Wear chemical-resistant apron or other impervious clothing if necessary.

Hygiene Measures

Wash hands after handling.

Section9: Physical and Chemical Properties

Appearance

Physical state: Solid Form Powder Colour : Black

: Slightly plastic odor Odor : Not applicable pН

Boiling Point (degrees : Not applicable

centigrade)

Vapor Pressure (Pa) Not applicable

Vapor Density : Not applicable

(AIR=1)

Density (/3) : Approx. 1.2 Measuring Temp (degrees centigrade): 25

Formula Weight : Not applicable

Melting Point (degrees : (Softening point) Approx.110

centigrade)

Decomposition temperature (degrees : Not available

centigrade)

Viscosity (Pa s) : Not applicable Volatile () : 0.2 or below

Evaporation Rate (Butyl Acetate = 1): Not applicable

Water Solubility (g/L) : Insoluble Chloroform Solubility (g/L) : Slightly soluble

Section 10: Stability and Reactivity

Stability:

Stable

Hazardous Reaction:

Dust explosion, like most finely grained organic powders.

Condition to Avoid:

Not applicable in normal use.

Materials to Avoid:

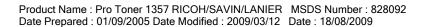
Not applicable in normal use. Hazardous Polymerization :

None

Hazardous Decomposition or Byproducts:

Decomposition products will not occur.

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Section11: Toxicological Information

Acute Toxicity

Acute Oral Toxicity (LD50):

5000 or over

Acute Dermal Toxicity:

Not available

Acute Inhalation Toxicity:

Not available

Local effects

Acute Skin Irritation(PII) : Non-irritant (Rabbit) Acute Eye Irritation :

Not available (Ingredients are not classified as dangerous according to Directive 67/548/EEC.)

Sensitization

Acute Allergenic Effects:

0 % (Marmot)

Specific Effects

Carcinogenicity:

Carbon black and titanium dioxide contained in this product are classified to Group 2B of IARC as the result of inhalation test in use of rat.

But oral/skin test does not show carcinogenicity.

The toner containing carbon black did not show carcinogenicity in chronic inhalation exposure test in use of rat.

In the animal experiment with very high concentration of titanium dioxide (excessive burden of rat's lungs clearance mechanism (overload phenomenon)), the rat alone showed lung tumor. Under a normal use practice, the concentration should be far lower than the above; and it is assumed that there is no such use.

Also, relation between respiratory disease and work exposure of titanium dioxide is not observed with epidemiological survey.

Mutagenicity : Negative (Ames test)

Reproduction Toxicity: Does not contain substances listed as hazardous to reproductive health.

Teratogenic : Not available

Section12: Ecological Information

Mobility : No data are available on any adverse effects on the environment.

Persistence/Degradabilit : Not available

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Bioaccumulation : Not available

Ecotoxicity

Acute Toxicity for Fish (LC50) : Not classified as toxic (EU Directive 1999/45/EC)mg/l/96hr Acute Toxicity for Daphnia : Not classified as toxic (EU Directive 1999/45/EC)mg/l/48hr

(EC50)

Algae Inhibition Test (IC50) : Not classified as toxic (EU Directive 1999/45/EC)mg/l/72hr

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Section13: Disposal Consideration

General information:

Dispose of waste and residues in accordance with local authority requirements.

Disposal methods:

Disposal recommendations are based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal. Confirm disposal procedures with local regulations.

Precautions

Do not throw the toner cartridge or toner into an open flame. Hot toner may scatter and cause burns or other damage.

Section14: Transport Information

International Regulations

Land Transport

RID/ADR : Not applicable
DOT 49 CFR : Not applicable
ADNR : Not applicable

Sea Transport

IMDG Code : Not applicable

Air Transport

ICAO-TI/IATA-DGR : Not applicable UN Number : Not applicable

Specific Precautionary Transport Measures and Conditions

Avoid direct sunlight in quality.

Section15: Regulatory Information

Regulations

US Information

Information on the label: Not required TSCA (Toxic Substances Control Act):

This toner complies with all applicable rules and regulations under TSCA.

SARA (Superfund Amendments and Reauthorization Act) Title III

313 Reportable Ingredients : Not regulated California Proposition 65 : Not regulated

Canada Information

WHMIS Controlled product : Not a controlled product

EU Information

Information on the label (1999/45/EC and 67/548/EEC)

Symbol & Indication: Not required

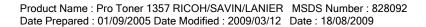
R-Phrase : Not required S-Phrase : Not required

Special Precautions under 1999/45/EC Annex V : Not required

76/769/EEC

This product complies with applicable rules and regulations under 76/769/EEC

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Section16: Other Information

Explanation of Hazardous Materials Identification System [HMIS]& National Fire Protection Association [NFPA] Hazard Rating Systems:

Both the HMIS and NFPA systems use number from "0" to "4" to show the degree of hazard in an uncontrolled situation:

0=Minimum Hazard 1=Slight Hazard 2=Moderate Hazard 3=Serious Hazard 4=Severe Hazard Colors may also be used in both systems:

Blue=Health Hazard Red=Fire Hazard Yellow=Reactivity Hazard White=Indicate a special hazard HMIS will specify any Personal Protective Equipment reqired [PPE],

NFPA will specify OX(oxidizer), Acid(acid), ALK(Alkali), COR(Corrosive), W(use no water), xx(Radioactive).

Literature References :

ANSI Z400.1-1993

ISO 11014-1

Commission Directive 91/155/EEC

IARC (1996) "IARC Monograph 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,

H.Muhle, B.Bellman, O.Creutzenberg, C.Dasenbrock, H.Emst, 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,pp280-299

IARC (2008) "IARC Monograph on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol.93'

NIOSH CURRENT INTELLIGENCE BULLETIN "Evaluation of Health Hazard and Recommendation for Occupational Exposure to Titanium Dioxide DRAFT"

: Threshold Limit Values for Chemical Substances and Physical Agents and **ACGIH-TLV**

Biological Exposure Indices

US Department of Labor, 29CFR Part 1910, Tables Z-1, Z-2, and Z-3 **OSHA Z-Tables** NTP (USA)

US Department of Health and Human Services National Toxicology

Program Annual Report on Carcinogens

DFG-MAK GER: DFG List of MAK and BAT Value

: EU Directive 67/548/EEC Symbol (EC) 91/155/ EEĆ : EU Directive 91/155/ EEC 1999/45/EC Annex V : EU Directive 1999/45/EC 76/769/EEC EU Directive 76/769/EEC

Regulation (EC) No 304/2003 of the European Parliament and of the EC 304/2003

Council of 28 January 2003 concerning the export and import of dangerous

WHMIS Controlled : Canada Workplace Hazardous Information System

product

: Guidance Note on the Interpretation of Exposure Standards for OELs-TWA (Australia)

Atmospheric Contaminants in the Occupational Environment [NOHSC:

3008 (1995)]

Abbreviations:

OSHA PEL PEL (Permissible Exposure Limit) under Occupational Safety and Health Act

ACGIH-TLV TLV (Threshold Limit Values) under American Conference of Governmental Industrial

Hygienists

MAK (Maximale Arbeitsplatz Konzentrationen) by Deutsche Forschungs Gemeinschaft **DFG-MAK** RoHS Restriction of the use of certain Hazardous Substances in Electrical and Electronic

Equipment

TWA Time Weighted Average

International Agency for Research on Cancer **IARC**

NTP National Toxicology Program

WHMIS Workplace Hazardous Information System

NOHSC National Occupational Health and Safety Commission Act 1985

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