DATE REVISED :
DATE PREPARED : March 21, 2000

MATERIAL SAFETY DATA SHEET (1/4)

SDS No.908050 PRODUCT NAME: MA-32 Tally T9114 #084550

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MA-32

MANUFACTURE'S NAME
Tomoegawa Paper Co., Ltd.
5-15, Kyobashi 1-chome, Chuo-ku, Tokyo 104-8335, Japan
Tel: +81-3-3272-4118
Fax: +81-3-3281-6820

2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	CAS No.	Proportion (% by wt.)	OSHA PEL	ACGIH TLV	Other Limits
Polyester	186397-54-6	> 83	Not listed	Not listed	None
Polypropylene Wax	9010-79-1	< 3	Not listed	Not listed	None
Organic pigment	31714-55-3	< 2	Not listed	Not listed	None
Carbon black	1333-86-4	< 10	3.5mg/m³	3.5mg/m³	None
Iron oxide	1309-38-2	< 2	Not listed	Not listed	None

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

Odorless black fine powder.

Nonflammable, but when suspended in air, is combustible as with most organic powders.

CARCINOGENICITY: Carbon black is reclassified as a group 2B by IARC, but inhalation test using a typical toner showed no association between toner and animal tumors.

POTENTION HEALTH EFFECTS

EYES: Solid or dusts may cause irritation or corneal injury.

SKIN CONTACT: Essentially nonirritating to skin.

SKIN ABSORPTION: Skin absorption is unlikely due to physical properties.

INGESTION: Oral toxicity is believed to be low.

INHALATION: Minimal irritation to respiratory track may occur.

FIRE AND EXPLOSION

SENSITIVITY TO MECHANICAL IMPACT: None

SENSITIVITY TO STATIC CHARGE: None

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4. FIRST AID MEASURES

EYES: Flush eyes immediately with plenty of water for at least 15 minutes.

SKIN: Flush with plenty of water. Use soap.

INGESTION: No adverse effects anticipated by this route of exposure incidental to proper handling.

INHALATION: Remove to fresh air. If effects occur, consult medical personnel.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: No data available

FLAMMABLE LIMITS
LEL: No data available
UEL: No data available

EXTINGUISHING MEDIA: Water fog, foam, CO_2, dry chemical.

FIRE-FIGHTING EQUIPMENT: Wear full bunker gear including a positive pressure self-contained breathing apparatus in case of burning in large quantities.

6. ACCIDENTAL RELEASE MEASURES

Minimize the release of particulates. Wear personal protective equipment.
Do not use vacuum cleaner.
After by lightly spraying with water to prevent development of dust, spills should be swept up or wiped up. Then residuals can be removed with soap and water. Preferred to use the material in a place, covering up the floor and surrounding matters with suitable sheets such as paper, in a case of being not fit to scrub the floor with water. These used sheets should be wrapped up in spills and transfer into a suitable container for disposal.
Garments may be washed or dry cleaned, after removal of loose toner.

7. HANDLING AND STORAGE

Avoid creating dust. Clean up all spills promptly.
Inhalation and contact with skin or eyes should be avoided.
Provide general ventilation. Good general ventilation should be sufficient for most conditions.
Store in a cool, well ventilated place away from flames and spark-producing equipment.
May toners be preferred to use or to handle at the suitable place without concerneing about smudges to which are given rise by releasing them.

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION

RESPIRATORY PROTECTION: For most conditions, no respiratory protection should be needed; however, in dusty atmospheres, use an approved dust respirator.

SKIN PROTECTION: No precautions should be needed under normal use.

EYE PROTECTION: No precautions should be needed under normal use.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Black fine powder
ODOR: None
BOILING POINT: N.A.(not applicable)
VAP PRESS: N.A.
VAP DENSITY: N.A.
SOL IN WATER: Negligible
SP. GRAVITY: 1.2
MELTING POINT: N.A.
pH: N.A.
% VOLATILE: N.A.

10. STABILITY AND REACTIVITY

STABILITY: This is a stable product.

INCOMPATIBILITY: (SPECIAL MATERIALS TO AVOID) None

HAZARDOUS DECOMPOSITION PRODUCTS: CO or NOx (by high heat and fire)

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION

CARCINOGENICITY:
In 1996, the IARC revaluated carbon black as a GROUP 2B carcinogen (possible human carcinogen). This evaluation is given to carbon black for which there is inadequate human evidence, but sufficient animal evidence. The latter is based upon the developer of lung tumors in rat receiving chronic inhalation exposures to free carbon black at level that induce particle overload of the lung.
Studies performed in animal models other than rats 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.

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CHRONIC EFFECTS:
In a study in rats (H.Muhle) 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 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 changes was reported in the lowest (1mg/m^3) exposure group, the most relevant level to potential human exposures.

12. ECOLOGICAL INFORMATION

None

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste must be disposed of in accordance with country and local environmental control regulations.

14. TRANSPORT INFORMATION

TRANSPORT INFORMATION: This is not a hazardous product.
UN No.: None allocated.

15. REGULATORY INFORMATION

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

16. OTHER INFORMATION

NFPA Rating: Health = 1 Flammability = 1 Reactivity = 0

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.