



MATERIAL SAFETY DATA SHEET

[1.CHEMICAL PRODUCT AND COMPANY IDENTIFICATION]

PRODUCT NAME : ML-D3470A
 COMPANY : Samsung Electronics Company
 416, Maetan-3Dong, Yeongtong-Gu, Suwon-City, Gyeonggi-Do, Korea 443-742
 TELEPHONE NO. : 82-31-200-8311
 EMERGENCY TELEPHONE NO. : 82-31-200-8311

[2.COMPOSITION / INFORMATION ON INGREDIENTS]

SUBSTANCE OR PREPARATION : Preparation

INGREDIENTS AND :

CONCENTRATION RANGE

Ingredients

Concentration Range(%)

CAS RN

Black toner

INGREDIENTS CONTRIBUTING TO : None

THE HAZARD(JAPAN)

[3.HAZARDS IDENTIFICATION]

MOST IMPORTANT HAZARDS :

ADVERSE HUMAN HEALTH EFFECTS : To the best of our investigation, no special hazards have to be mentioned.

ENVIRONMENTAL EFFECTS : To the best of our investigation, no information about adverse Effect in the environment available.

PHYSICAL AND CHEMICAL HAZARDS : May cause risk of dust explosion

CLASS NAME FOR MSDS IN JAPAN : Not applicable

[4.FIRST-AID MEASURES]

IN CASE OF INHALATION : Remove person to fresh air. If necessary seek medical attention.

IN CASE OF SKIN CONTACT : Wash material off the skin with plenty of water and soap. If necessary seek medical attention.

IN CASE OF EYE CONTACT : Immediately hold eyelids open and flush with a stream of water for at least 15 minutes. If necessary seek medical attention.

IN CASE OF INGESTION : Seek medical attention. Never give anything by mouth to an unconscious person. If possible, rinse out mouth and give one or two glasses of water or milk to drink.

[5.FIRE-FIGHTING MEASURES]

EXTINGUISHING MEDIA : Water spray, powder

NOT SUITABLE EXTINGUISHING MEDIA : No information available

SPECIFIC HAZARDS : May produce irritating or toxic gases in a fire.

SPECIFIC METHODS : Keep away from sources of ignition and use appropriate extinguishing media.Fight fire from upwind position if possible.



PROTECTION OF FIREFIGHTERS : Use goggles in combination with dust mask, and another protections as appropriate to situation.

[6.ACCIDENTAL RELEASE MEASURES]

PERSONAL PRECAUTIONS : Use mask, goggles and protective gloves.
Large spills : Remove person to safety.
Ensure adequate ventilation.
Treat from upwind position.

ENVIRONMENTAL PRECAUTIONS : Do not discharge into the drains, surface waters or ground water directly.

METHODS FOR CLEANING UP : Prevent dispersion of dust.
Sweep or vacuum by dust-explosion-proof type cleaner.

PREVENTION OF SECONDARY HAZARDS : No information available

[7.HANDLING AND STORAGE]

HANDLING

TECHNICAL MEASURES : Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.

PRECAUTIONS : Avoid inhalation of fine dust .

SAFE HANDLING ADVICE : Handle in well-ventilated areas.
Use safety glasses and protective gloves as appropriate to situation.
Wash hands and face and gargle after handling.
Prevent generation of dust.
This material may cause risk of dust explosion.

STORAGE

STORAGE CONDITIONS : Keep container tightly closed.
Protect from sun. Store in a well-ventilated room (under 40 C).

PACKAGING MATERIALS : No information available

[8.EXPOSURE CONTROLS / PERSONAL PROTECTION]

ENGINEERING MEASURES : Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Use an adequate ventilation.
Use local exhaust ventilation, in case of generation of dust.

LIMIT VALUES

ACGIH(TLV) : TWA 3.5mg/m3
Carbon black
TWA 2mg/m3(fume)
Paraffin wax

OSHA(PEL) : TWA 3.5mg/m3
Carbon black

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION : Use dust mask, as appropriate to situation.

HAND PROTECTION : Rubber gloves

EYE PROTECTION : Safety goggles with side shield(Safety goggles or Face shield)

SKIN AND BODY : Full-body suit

PROTECTION

HYGIENE MEASURES : No information available

[9.PHYSICAL AND CHEMICAL PROPERTIES]

PHYSICAL STATES

FORM : Pulverizing powder
COLOUR : Black
ODOUR : Odourless
pH : No data available
SPECIFIC TEMPERATURES/TEMPERATURE RANGES AT WHICH CHANGES IN PHYSICAL STATE OCCUR
BOILING POINT : No data available
MELTING POINT : No data available
DECOMPOSITION TEMPERATURE : No data available
FLASH POINT : No data available
AUTOIGNITION TEMPERATURE : No data available
EXPLOSION PROPERTIES
EXPLOSION : UPPER LIMIT No data available LOWER LIMIT No data available
VAPOUR PRESSURE : No data available
VAPOUR DENSITY : No data available
DENSITY : 1.2 g/mL (20.0°C) (68°F)
SOLUBILITY
WATER SOLUBILITY : Insoluble
SOLVENT SOLUBILITY : Partially soluble in toluene, chloroform and tetrahydrofuran.
OCTANOL/WATER PARTITION COEFFICIENT : No data available
OTHER DATA : No data available

[10.REACTIVITY AND STABILITY]

STABILITY : Stable in general.
HAZARDOUS REACTIONS : Stable.
CONDITIONS TO AVOID : No information available
MATERIALS TO AVOID : No information available
HAZARDOUS DECOMPOSITION PRODUCTS : No information available
OTHERS : No information available

[11.TOXICOLOGICAL INFORMATION]

ACUTE TOXICITY : Oral, rat, LD50 : > 5000 mg/kg
LOCAL EFFECTS :
CORROSIVITY : No information available
SKIN IRRITATION : Rabbit, undiluted, 4 hour semi-occluded application (OECD404) :
Not irritant (According to the criteria of EU)
EYE IRRITATION : Rabbit, undiluted, OECD405 : Not irritant (According to the criteria of EU)
SENSITIZATION : Guinea pig, Guinea Pig Maximization Test : Negative
CHRONIC TOXICITY/LONG TERM TOXICITY : No information available
CARCINOGENICITY : No information available
IARC : Group2B : Possibly carcinogenic to humans
Carbon black
NTP : Not established
OSHA : Not established
MUTAGENICITY : Ames test (TA98,TA100,TA1535,TA1537,TA1538, WP2uvrA) : Negative
TERATOGENICITY : No information available
REPRODUCTION TOXICITY : No information available



OTHER DATA : No information available

[12.ECOLOGICAL INFORMATION]

MOBILITY : No information available

PERSISTENCE/
DEGRADABILITY : No information available

BIOACCUMULATION : No information available

ECOTOXICITY :

AQUATIC TOXICITY : No information available

OTHER DATA : No information available

[13.DISPOSAL CONSIDERATIONS]

Review "HANDLING AND STORAGE (Section 7)".
 Passed to a licensed waste contractor.
 This product may cause risk of dust explosion.
 Dispose of waste in accordance with local, state, and federal regulations.
 Dispose of waste in accordance with local, state and federal regulations.

[14.TRANSPORTATION INFORMATION]

Follow all regulations in your country or region

UN CLASS/UN NUMBER : Not applicable

PRECAUTIONS : Review "ACCIDENTAL RELEASE MEASURES (Section 6)".
 Review "HANDLING AND STORAGE (Section 7)".
 Ensure containers without breakage or leakage.
 Ensure containers tightly fixed.
 Follow all regulations in your country or region.

[15.REGULATORY INFORMATION]

Follow all regulations in your country or region

INVENTORIES : ENCS(Japan) Yes

TSCA(USA) Yes

EINECS(EU) No(ELINCS)

AICS(Australia) Yes

DSL(Canada) No(NDSL)

ECL(Korea) Yes

PICCS(Philippines) Yes



[16.OTHER INFORMATION]

REFERENCE : -Safety data sheet for chemical products - Part 1: Content and order of sections(ISO 11014-1)
-International Chemical Safety Cards(ICSC) (Compiler's Guide)(1994)

To the best of the manufacturer's knowledge,the information contained herein is accurate. However, neither the manufacturer, nor any of its affiliates, make any representations or warranties (expressed or implied), nor assumes any liability(including liability for any direct, incidental, consequential, or other damages) with respect to the accuracy or completeness of the information contained herein. Such information may be (without limitation) invalid if the specified material is used in combination with another ,in a particular process, or under unusual conditions. Determination of suitability of any material for any given purpose is the sole responsibility of the user who assumes all risk and responsibility therefore. All materials may present unknown hazards and should be used with appropriate caution. The manufacturer cannot and does not guarantee that the hazards described herein are the only ones that exist.