

MATERIAL SAFETY DATA SHEET

MANUFACTURER INFORMATION

MANUFACTURER : Denki Kagaku Kogyo Kabushiki Kaisya
SECTION IN CHARGE : Fabricated Product Dept.
ADDRESS : Sanshin Bldg., 1-4-1 Yuraku-cho,
Chiyoda-Ku, Tokyo, Japan
EMERGENCY PHONE No. : 81-3-3507-5379 (voice)
81-3-3507-5084 (fax)

PRODUCT NAME : Denka thermofilm ALS (trade name)

COMPOSITION / INFORMATION ON INGREDIENTS

DISTINCTION OF SINGLE PRODUCT OR MIXTURE

: mixture (layered)
INGREDIENT : polymers which consists of three
layer structure
1st layer : Polyethyleneterephthalate
2nd layer : Polyethylenic resin
3rd layer : Polystyrenic resin

HAZARDS IDENTIFICATION

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Emergency overview
Odorless translucent film. Can burn in a fire.
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POTENTIAL HEALTH EFFECTS AND FIRST AID MEASURES

EYE : In usual handling, this does not go
into an eye. When entering, it may
damage an eyeball. Wash an eye with
pure water and go to doctor.
SKIN : There is usually no skin obstacle by
contact. If abnormalities occur,

flush the skin with pure water and go to doctor.

Cutting of the skin may be carried out when the skin is strongly rubbed with the edge of a film.

INHALATION : Gas may have occurred by high temperature during heat sealing. When inhaling this gas severely, move to the place of fresh air and gargle simultaneously. When coughing and breath difficulty will occur, go to doctor.

INGESTION : Ingestion does not happen in usual handling. If little, it does not need special action. If abundant, makes vomit.

FIRE FIGHTING MEASURES

Sever the source of combustion like a general fire, and extinguish the fire using a lot of water and a fire-extinguisher.

In case of fire, black smoke and carbon monoxide, etc. may occur by heat decomposition and imperfect combustion of polymer ingredient. Use suitable protection implement for avoiding risks of inhaling those and barring a field of view for injury on fire-extinguishing activity.

ACCIDENTAL RELEASE MEASURES

Sweep or vacuum material and place in a disposal container.

HANDLING AND STORAGE

HANDLING : Although there is no fear such as ignition, combustion, and explosion in normal temperature, it can burn at high temperature.
Since this material is a roll-like

film with heavy weight, take caution
in fall up to a leg etc.

Cutting of the skin may be carried
out when the skin is strongly rubbed
with the edge of a film.

STORAGE : Storage in room at normal temperature
and avoid to expose by rain, wind,
and direct sunshine.

EXPOSURE CONTROLS / PERSONAL PROTECTION

MANAGEMENT CONCENTRATION

: Not applicable

PERMISSION CONCENTRATION

: Not defined

MEASURE AGAINST EQUIPMENT

: Not necessary

PROTECTION

: Not necessary at usual handling

PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE : Translucent plastic film

SPECIFIC GRAVITY

: 1.03

MELTING POINT

: Since this material is a mixture, it
does not exist clearly.

SOLUBILITY IN WATER

: Not applicable

STABILITY AND REACTIVITY

FLASH POINT : No data available

IGNITING POINT

: There are not natural ignition nature
and ignition nature by the reactivity
with water.

INFLAMMABILITY

: Yes

OXIDIZING

: No

SELF-REACTIVITY

: No

VOLATILITY

: No

DUST EXPLOSION : Not applicable

STABILITY AND REACTIVITY

: Stable and deficient in reactivity

TOXICOLOGICAL INFORMATION

Although there is no knowledge now, the following view is appropriate.

STIMULUS NATURE : Physical stimulus

ACUTE TOXICITY : Inactive physiologically and there is no special acute action to a human body.

ECOLOGICAL INFORMATION

Decomposition nature, accumulation nature, and fish

TOXICITY : Not applicable

OTHERS : Since a film is considered to be stable that it is hard to decompose, it must not be abandoned anywhere to prevent that a sea living thing and birds take in.

DISPOSAL CONSIDERATION

WASTE MANAGEMENT INFORMATION (DISPOSAL)

: Any disposal practice must be in compliance with local, state, and federal laws and regulations (contact local or state environmental agency for specific rules).

TRANSPORT INFORMATION

Ensure shipping and load to prevent collapse and damage.

REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION RULES

: This product contains no substances under this rules.

MATERIAL SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : DENKA THERMOSHEET EC
GRADE : EC-R
MANUFACTURER : Denki Kagaku Kogyo Kabushiki Kaisha
ADDRESS : Sanshin Bldg.,1-4-1 Yuraku-cho, Chiyoda-ku, Tokyo
100-8455, Japan
EMERGENCY TELEPHONE NO. : 81-3-3507-5377(voice)
81-3-3507-5084(fax)

2. COMPOSITION / INFORMATION ON INGREDIENTS

<u>CHEMICAL NAME</u>	<u>CAS No.</u>	<u>Weight %</u>
Polystyrene	9003-55-8 AND 9003-53-6	>90%
Carbon Black	1333-86-4	<5%
Additives(trade secret)	—	<5%

HAZARD DATA : None Established

3. HAZARDS IDENTIFICATION

CAUTION!

Odorless sheet. Can burn in a fire, releasing hazardous gases and fumes.

4. FIRST AID MEASURES

INHALATION : If exposed to fumes from decomposition products at high temperature, remove to fresh air. Get medical attention, if breathing is difficult.

SKIN : If burned by contact with molten material, cool as quickly as possible. Do not peel material from skin. Get medical attention.

EYES : Flush eyes with plenty of water for at least 15minutes. Get medical attention.

INGESTION : Immediately induce vomiting, and contact a physician. Seek medical advice.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

: water, water spray, dry chemical, carbon dioxide, foam

SPECIAL FIRE FIGHTING PROCEDURES

: Wear self-contained breathing apparatus and protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARD : None

6. ACCIDENTAL RELEASE MEASURES

Sweep or vacuum sheet and place in a disposal container.

Keep sheet out of walking surface to avoid a slipping hazard.

7. HANDLING AND STORAGE

HANDLING : Protection against fire and explosion.

STORAGE : Store in a cool, dry place. Keep away from heat, sparks and flame.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS :

Occupational exposure limits for this product has not been established.

ENGINEERING CONTROLS(VENTILATION) :

Local ventilation should be used when processing at high temperature.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY : Respiratory protection may be needed in special circumstances such as mechanical generation of dusts.

EYE PROTECTION : Safety glasses with side shields or goggles may be needed in special circumstances such as mechanical generation of dusts.

SKIN PROTECTION : When handling or processing sheet in a molten state, wear gloves to protect against thermal burns.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE : Solid Sheet

COLOR : varies with product

ODOR : odorless

MELTING POINT : Not Applicable

FLASH POINT : Not Applicable

IGNITION TEMPERATURE : Not Applicable

SPECIFIC GRAVITY : 1.06

SOLUBILITY IN WATER : insoluble

10. STABILITY AND REACTIVITY

STABILITY : Stable at normal temperature.
INCOMPATIBILITY (Material to avoid) : none
HAZARDOUS POLYMERIZATION : Will not occur.

11. TOXICOLOGICAL INFORMATION

No information is available concerning the toxicity of this product.

12. ECOLOGICAL INFORMATION

No information is available concerning the ecological impacts of this product.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws.

14. TRANSPORT INFORMATION

Not regulated

15. REGULATORY INFORMATION

None

16. OTHER INFORMATION

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