

Name of Grade	MH-770 (Acid anhydride)	CODE NO	11374E
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1. Product and company identification

a) Product Name	MH-770 (Acid anhydride)
b) Recommended use of the chemical and restrictions on use	Liquid epoxy hardner
c) Manufacture Information	
Manufacturer	GREENSTAR CO.,LTD.
Address	539-3, Segyo-dong, Pyeongtaek-city, Kyung GI, KOREA
Emergency or Information Contact	TEL: 031) 657-2321~2326 FAX: 031) 657-2327

2. Hazards identification

a) Hazard Risk Classification	Serious Eye Damage/Irritation :Category 2 Respiratory sensitization : Category 1 Skin sensitization : Category 1 Chronic hazards to the aquatic environment : Category 2
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b) Label elements including precautionary statements	
Symbol	



Signal word	Danger
Hazard risk statement	H317 May cause allergic skin reaction H319 Cause serious eye irritation H334 Cause allergic, asthma, dyspnoea reaction when inhaled H411 Toxic to aquatic life with long lasting effects
Precautionary statement	
Prevention	P264 Wash thoroughly after handling P280 Wear protective gloves/clothing/eye protection/face protection P261 Avoid breathing dust/fume/gas/mist/vapors/spray P272 Contaminated work clothing should not be allowed out of the workplace P273 Avoid release to the environment P285 If badly ventilated, wear respiratory protection
Response	P302+P352 If on skin : Wash with plenty of soap and water P304+P341 If inhaled, remove victim to fresh air and keep at rest a position comfortable for breathing P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. remove contact lenses, if present and easy to do. Continue rinsing

Response	P333+P313 If skin irritation or rash occurs: Get medical advice/attention P337+P313 If eye irritation persists: Get medical advice/attention P363 Wash contaminated clothing before reuse P342+P311 If Respiratory problems persists: Get medical advice/attention P391 Collect spillage
Storage	P403+P233 Store in a well- ventilated place. Keep container tightly closed.
Disposal	P501 Dispose of contents/container to ...

C) Other hazard risk which are not included in the classification criteria

Health	1
Fire	1
Reactivity	0

3. Composition/Information on ingredients

Chemical Name	Other name	CAS number	Content (%)
METHYL TETRAHYDROPHthalic ANHYDRIDE	-	34090-76-1	80 - 100
ETC	-		1 - 10

4. First aid measures

a) Eye contact	Flush eye plenty of water for at least several minutes while holding eyelids open Consult a physician if signs of irritation appear
b) Skin contact	If skin irritation occurs: Get medical advice/attention Immediately remove contaminated clothing or shoes, wash skin plenty of water for at least several minutes. Isolate the contaminated area Do not reuse clothing until thoroughly decontaminated
c) Inhalation	Move person to fresh air area and provide oxygen if breathing is difficult Consult a physician if effects occur
d) Ingestion	Rinse mouth with water Consult a physician if effects occur
e) Indication of immediate medical attention and notes for physician	Get adequate measure with the symptoms

5. Fire-Fighting measure

a) Suitable and unsuitable extinguishing media	
- Suitable extinguishing media	Use Dry chemical, carbon dioxide, water, foam, sand
- Unsuitable extinguishing media	No data
- Conflagration	Use foaming agent in use or water spray
b) Specific hazards arising from the chemical	In case of combustion, Toxic fumes might be formed
c) Special protective equipment and precautions for fire-fighters	The rescuer wear a protective equipment isolate from heat, electrical equipment, sparks and open flame

6. Accidental release measures

- | | |
|--|--|
| a) Personal precautions, protective equipment and emergency procedures | Eliminate all ignition sources
Do not touch or walk through spilled material
Stop leak if you can do it without risk
Use care with the material and condition to avoid |
| b) Environmental precautions and protective procedures | Avoid to discharge in the environmental
Store away from water supply and drainage |
| c) Methods and materials for containment and cleaning up | No entry to unauthorized person
Absorb on sand or non-flammable material and store away in container
All disposal methods must be in compliance with applicable local regulations
Sweep spilled material into non-leaking containers. |

7. Handling and storage

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|----------------------------------|---|
| a) Precautions for safe handling | Avoid inhalation, Avoid contact with eyes, skin, and clothing
Store and handle in accordance with the existing law and regulation
Contaminated work clothing should not be allowed out of the workplace
Avoid prolonged or repeated exposure |
| b) Conditions for safe storage | Store at good place of ventilation.
Avoid to contact with fire source. |

8. Exposure controls & personal protection

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|-------------------------------------|---|
| a) Control parameters | |
| Domestic regulation | No data |
| ACGIH (TLV) | No data |
| Biological exposure standard | No data |
| b) Appropriate engineering controls | Wash hands before breaks and at the end of workday
Mechanical exhaust required
Install a local ventilation
Handle in accordance with good industrial hygiene and safety practice |
| c) Personal protective equipment | |
| – Respiratory protection | Handle in a ventilated enclosure
For greater protection a face piece chemical cartridge respirator is recommended |
| – Eye protection | No data |
| – Hands protection | No data |
| – Body protection | No data |

9. Physical and chemical properties

a) Appearance	
physical state	Liquid
color	Light –yellow
b) Odor	odourless
c) Odor threshold	No data
d) PH	No data
E) Melting/freezing point	No data
f) Initial boiling point and boiling range	> 307 °C
g) Flashing point	135 °C
h) Evaporation rate	No data
i) Flammability	No data
j) Upper/lower flammability or explosive limits	- / -
k) Vapor pressure	1mmHg
L) Solubility	24.56 mg/l (at 25 deg C)
m) Vapor density	5.7 (air=1)
n) Specific gravity	1.20 ± 0.05 (at 25°C)
o) Partition coefficient	No data
p) Auto-ignition temperature	No data
q) Decomposition temperture	No data
r) Viscosity	40 – 60 (at 25°C)
s) Formula mass (Mw)	No data

10. Stability and reactivity

a) Chemical stability	Stable in recommended conditions
b) Possibility of hazardous reactions	It may cause exothermic polymerization with acid,amines or other epoxy
c) Conditions to avoid	Avoid to contact with strong oxidizing agent,heat,spark and flame Don't apply heat to container
d) Hazadous decomposition products	May produce hazardous carbon oxides,chloro hydrogen

11. Toxicological information

a) Information on the likely route of exposure	No data
b) Health information from short and long –term exposure	
Acute toxic	
Oral	LD50 4428 mg/kg Rat
Dermal	No data
Inhalation	No data
Skin corrosive/irritant	Probability of MOD/SEV=0.042
Serious eye damage/eye irritation	Prob. of SEV Ocular Irritancy=1.000
Respiratory sensitization	Cause Respiratory sensitization (EU 1272–2008)
Skin sensitization	Cause Skin sensitization (EU 1272–2008)
Carcinogenicity	
IARC	No data
OSHA	No data

ACGIH	No data
NTP	No data
WISHA	No data
Germ cell mutagenicity	No data
Reproductive toxicity	No data
Specific target organ toxicity (single exposure)	No data
Specific target organ toxicity (repeated exposure)	No data
Aspiration hazard	No data

12. Ecological information

a) Aquatic and terrestrial ecotoxicity

Fish	LC50 2.224 mg/l 96 hr (ECOSAR Class :Neutral organics)
Crustacean	LC50 1.685 mg/l 48 hr (ECOSAR Class :Neutral organics)
Birds	EC50 1.907 mg/l 96 hr (ECOSAR Class :Neutral organics)

b) Persistence and degradability

Persistence	log Kow 4.00 (KowWin estimate)
Resolvability	No data

c) Bioaccumulative potential

Concentration	BCF 202.6
Bio resolvability	(Cut-off value = 0.1581 : Non-resolvability (BIOWIN 6))

d) Mobility in soil

No data

e) Other adverse effects

No data

13. Disposal considerations

a) Disposal method	Dispose of contents/container to the regulations
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14. Transport information

a) UN number	3082
b) UN proper shipping name	Environment hazardous substance (ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.)
c) Transport hazard class	9
d) Packing group	III
e) Marin pollution	No data
f) Special precaution in connection with transport or conveyance	
Emergency procedure at fire	F-A
Emergency procedure at leakages	S-F

15. Regulatory information

a) Occupational safety and health act	No data
b) Toxic chemical control act	No data
c) Safety control dangerous	No data
d) Wastes control act	No data
e) Other requirements in domestic and other countries	
Domestic regulation	Not applicable
Persistent organic pollutant control act	Not applicable
Other countries	Not applicable
USA (OSHA)	No data

USA (CERCLA)	No data
USA (EPCRA 302)	No data
USA (EPCRA 304)	No data
USA (EPCRA 313)	No data
USA (Rotterdam convention material)	No data
USA (Stockholm convention material)	No data
USA (Substance Montreal protocol)	No data
EU (Classification)	Xi; R41R42/43
EU (Risk phrases)	R41, R42/43
EU (Safety phrases)	S2, S22, S24, S26, S37/39

16. Other information

a) Information source and references	No data
b) Issuing date	2013-01-04
c) Revision number and date	
Revision No.	1
Revision date.	2013-07-05
d) Others	

The Written Material safety data sheet is some edited and modified data on reference to the MSDS of Korea occupational safety and health agency.