

	MSDS	Document No.	U-MSDS-03-04-16		
		Originated Date	1996. 06. 15		
	MORTER PRIMER	Revision Date	2016. 11. 18		
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1. Chemical Products/Company Identification

- A. Product name : MORTER PRIMER
- B. Warning and use restrictions : Undercoating for waterproofing/dampproofing,
Undercoating for metal/concrete protection,
For electric power industry, Adhesive for waterproofing sheet
- C. Maker/Supplier/Distributor : KOREA PETROLEUM INDUSTRIES COMPANY
91 CHEOYONG-RO, NAM-GU, ULSAN TEL : (052)259-3700
- D. Prepared by : Manufacture Dept. Ahn Jae-Hong

2. Hazards Identification

- A. Harmfulness classification
- * Inflammable liquid: 2
 - * Skin corrosion/irritation: 2
 - * Severe eye damage/irritation: 2
 - * Carcinogenicity: 1A
 - * Germ cell mutagenicity: 1B
 - * Reproductive toxicity: 2
 - * Aspiration hazard: 1
 - * Target organ-systemic toxicant(single exposure): 2
 - * Target organ-systemic toxicant(repeated exposure): 1
 - * Acute aquatic environment hazard: 1
 - * Chronic aquatic environment hazard: 1
- B. Warning signs including precaution measure
- * Picture



- * Signal : Danger warning
- * Danger warning label
 - H250 : Self-ignite when exposed to air.
 - H304 : May be fatal if swallowed and inflow to the airway.
 - H315 : May cause skin irritation.
 - H319 : May cause acute irritation on eyes.
 - H340 : May cause genetic defects.
 - H350 : May cause cancer.
 - H361 : May cause damage to fetus or reproductive system.
 - H371 : May cause damage to specific target organs.

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- H372 : May cause damage to organs through prolonged or repeated exposure (specific target organs).

- H400 : Very toxic to aquatic organisms.

- H410 : Very toxic to aquatic organisms due to long-term effects.

* Precaution label

Prevention label

- P201 : Obtain instruction before use.

- P202 : Do not handle until all safety precautions have been read and understood.

- P210 : Keep away from heat/sparks/open flames/hot surface - No smoking.

- P233 : Seal the container completely.

- P240 : Ground container and acceptance facility.

- P241 : Use anti-explode electrical device, ventilator and light equipment.

- P242 : Use tools only which do not cause sparks.

- P243 : Take measure to prevent static.

- P260 : Do not breathe dust/fume/gas/mist/vapours/spray.

- P264 : Wash your hands thoroughly after handling substance.

- P270 : Do not eat, drink or smoke when this product is being used.

- P273 : Avoid release to the environment.

- P280 : Wear protective gears like gloves, clothes, goggles.

Countermeasure label

- P314 : Get Medical advice/attention if you feel uncomfortable.

- P321 : If burned, cool the affected area immediately with cold water as long as possible, and do not remove any clothes stucked to skin.

- P331 : Do not induce vomiting.

- P362 : Take off contaminated clothing and wash before reuse.

- P391 : Collect spillage.

- P301+P310 : Get medical attention in case of ingestion.

- P302+P352 : In case of skin contact, wash contaminated part with lots of water and soap.

- P303+P361+P353 : Take off all contaminated clothes if substance is on hair or skin.

Take a shower or wash contaminated part on your skin.

- P305+P351+P338 : Wash for few minutes if the product contacts with eyes. Remove contact lenses if possible. Keep washing.

- P308+P313 : If concerned about exposure or contact, seek medical advice and attention.

- P309+P311 : If exposed or uncomfortable, seek medical advice(doctor).

- P332+P313 : If skin irritation occurs, get medical advice/attention.

- P370+P378 : In case of fire, use appropriate fire fighting equipment such as fire extinguisher to turn off the fire.

Storage label

- P403+P235 : Store in a well ventilated place. Keep cool.

- P405 : Store locked up.

Disposal label

- P501 : Disposal contents under the relevant regulations.

C. Other hazards do not result in classification :

Health :2 Flammability : 3 Reactivity : 0

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3. Name of ingredient and contents

Chemical Name	Trade names and Synonyms	CAS No.	Content(%)
Oxidized asphalt	Asphalt (modified) (ASPHALT (BLOWN));	64742-93-4	40~50
Stoddard solvent	Dry cleaner naphtha	8052-41-3	17~25
Hydrogenated heavy naphtha	Hydrogenated heavy naphtha	64742-48-9	25~30
Hexane	Normal hexane	110-54-3	1~3
Toluene	Methylbenzene	108-88-3	1~3
Xylene	Dimethylbenzene	1330-20-7	1~3
Ethylbenzene	Phenylethyne	100-41-4	0.1~1
Benzene	Benzol	71-43-2	0.1~1

4. First-aid Measures

A. If in eyes

- Do not rub eyes.
- Wash eyes for over 15 minutes with plenty of water.
- Get medical attention if eye irritation persists.

B. Skin contact

- If the product contacted with skin(or hair), take off or remove the contaminated clothes.
- Get medical attention if skin irritation caused.
- Remove contaminated clothes and shoes. Isolate contaminated area.
- Prevent spread of contaminated part in case of slight skin contact.
- If burned, cool burned part with cool water as long as possible. Do not remove clothes stucked to skin.
- Wash skin with soap and water.

C. Inhalation

- Get medical attention if exposed or the patient feel uncomfortable.
- Move patient into fresh area.
- Make patient warm and released.
- If the patient breathes irregularly or stops breathing, give artificial respiration and oxygen.

D. Ingestion

- Get medical attention if exposed or the patient feel uncomfortable.
- If ingested or inhaled, use proper respiratory device instead of artificial respiration.
- If ingested, make patient to drink plenty of water and do not make patient vomit.
- Get medical attention immediately.

E. Note to physician

- If exposed, contact medical team and take emergency measures like pursuit method.
- Make medical team be aware of characteristics of this product in advance when they take protection measures.

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5. Explosion and fire fighting measure

- A. Proper (or improper) fire-extinguisher
- Use alcohol foam, carbon dioxide or water spray to extinguish fire.
 - In case of extinguishment by smothering, use dry sand or soil.
 - Avoid extinguishment by shooting water straightly.
- B. Specific hazards arising from chemicals (ex. hazardous substances generated during combustion)
- Highly flammable liquid and vapor.
 - May cause fire and explosion by vigorous polymerization.
 - Vapor may be released to the ignition source and ignited.
 - Can produce irritating and highly toxic gases by pyrolysis or combustion during burning.
 - May form explosive mixture at or above flash point.
 - Container may explode on heating.
 - Easily ignited by heat, spark, flame.
 - Leaked material has fire/explosion hazard.
 - Vapors may explode indoors, outdoors, and in drains.
 - Vapors may form explosive mixtures with air.
 - Vapors may cause dizziness or suffocation without awareness.
 - Inhalation and contact may irritate or burn the skin and eyes.
- C. Precaution measure/protective gears for fire extinguishment
- Rescuers should wear appropriate protective equipment.
 - Extinguish the area maintaining safety distance.
 - Most products are lighter than water.
 - Most vapors are heavier than air. Vapors can spread along the ground and accumulated in low-lying areas or confined spaces.
 - Move container from fire area if it is not dangerous.
 - In case of the fire at tank, extinguish at maximum distance or use unmanned fire fighting equipment.
 - In case of the fire at tank, cool it with large amount of water even after the fire has evolved.
 - In case of the fire at tank, If there is treble sound in the pressure relief device or if the tank is discolored, immediately withdraw from it.
 - In case of fire at tank, stay back from the tank.
 - In case of large fire at tank, use unmanned fire extinguishing equipment and if impossible, leave it to burn.
 - Cool the container with plenty of water till the fire is fully evolved.
 - Avoid the access of other people and prohibit access to dangerous areas.
 - Vapor or gas may ignite at distant ignition source and spread rapidly.

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6. Accidental release measure

A. Measure to protect body and protective equipment

- Avoid breathing dust / fume / gas / mist / vapors / spray.
- Very fine particles may cause fire or explosion. Remove all ignition sources.
- Wipe spills immediately and follow protection measure.
- Isolate contaminated areas.
- Do not enter who doesn't need to enter or do not have protective equipment.
- Remove all ignition sources.
- Put the all equipment on the ground when handling the material.
- Stop the leak if it is not dangerous.
- Do not touch a damaged container or spill without wearing appropriate protection equipment.
- Steam suppression foam may be used to reduce steam generation.
- Prevent dust formation.
- Note the substances and conditions to avoid.
- Ventilate before entering the enclosed space.
- Work leaning against wind and evacuate the person holding the wind.
- Avoid the access of other people, Isolate hazardous areas and prohibit the access.
- Do not clean and dispose without supervision of an expert.

B. Measure to protect environment

- Do not discharge into the environment.
- Block inflow to drainage ditch, drain, basement or closed space.

C. Purification and removal method

- Collect leaked materials.
- Absorb spill with inert material(ex. dry sand or earth) and place in chemical waste container.
- Absorb liquid and isolate contaminated areas.
- In case of large spill, make a ditch far from the leaked liquid.
- Collect absorbed material with clean explosion-proof tools.
- Put leaked material with clean shovel to clean and dry container and close loosely.
Remove the container from the leaked area.
- In case of small spill, absorb with sand and non-combustible material and place in container.
- Prevent wastewater from entering or diffusing into waterways, drains and underground.
- Do not use plastic containers.

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7. Handling and storage

A. Safe handling

- Do not handle until all safety precautions have been read and understood.
- Use explosion-proof electricity, ventilation, lamp, tools and equipment.
- Use non-sparking tools.
- Take anti-static measures.
- Wash hands thoroughly after using.
- Do not eat, drink or smoke when using this product.
- Do not apply pressure, cut, weld, solder, connect, punch or do not expose to heat, flame, spark, static electricity or other sources of ignition.
- Follow all MSDS/label precautions as product residue may remain after emptying container.
- Handle/store carefully.
- Open the cap carefully.
- Prevent long-term or persistent skin contact.
- Do not enter the storage area unless adequate ventilation is available.
- Put the all equipment on the ground when handling the material.
- Note the substances and conditions to avoid.
- Beware of high temperature.
- Pay attention to heat.
- Measure and ventilate the air before work as there is a risk of oxygen deficiency in the low area, closed space and confined space.
- Handle in a well-ventilated area only.
- Do not take out contaminated clothes from the work area.

B. Safe storage (Including conditions to avoid)

- Keep away from heat, spark, flame and high temperature.
- Seal container tightly.
- Store in a well-ventilated place and keep at a low temperature.
- Seal and store.
- Empty drums should be completely drained, properly blocked and immediately returned to the regulator or properly placed.
- Keep away from food and beverage.
- Do not heat directly.
- Heat in the original container only.
- Keep it tightly closed when not used.
- Store away from waterworks and sewers.

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8. Exposure control and personal protection

A. Exposure standards for chemical products and biological standard :

Internal regulations

- Oxidized asphalt : TWA 0.5mg/m³ asphalt fume(Benzene extract, Inhalation)
- Stoddard solvent : TWA 100ppm 525mg/m³
- Hydrogenated heavy naphtha : No data available
- Benzene : TWA 1ppm 3mg/m³ STEL 5ppm 16mg/m³ (standard of permission)
- Toluene : TWA 50ppm 188mg/m³ STEL 150ppm 560mg/m³
- Hexane : TWA 50ppm 180mg/m³
- Xylene : TWA 100ppm 435mg/m³ STEL 150ppm 655mg/m³
- Ethylbenzene : TWA 100ppm 435mg/m³ STEL 125ppm 545mg/m³

ACGIH regulations

- Oxidized asphalt : TWA 0.5mg/m³ asphalt fume(Benzene extract, Inhalation)
- Stoddard solvent : TWA 100ppm 525mg/m³
- Hydrogenated heavy naphtha : No data available
- Benzene : TWA 0.5ppm STEL 2.5ppm
- Toluene : TWA 50ppm
- Hexane : TWA 50ppm
- Xylene : TWA 100ppm STEL 150ppm
- Ethylbenzene : TWA 100ppm STEL 125ppm

B. Proper engineered management

- Use process isolation, local ventilation or do other engineering controls to regulate air levels below exposure limits.
- Install safety shower/eyewash station at the facility where this material is used or stored.
- Work place, where occur gas, vapor, mist, fume or dust, should not to be exceeded the harmful level of health. Therefore, the owner has to take necessary measures as installing facilities which suppress gas release, seal emission of gas, local ventilation equipment or total ventilation equipment.

C. Protective gears

- Respiratory protection
Respiratory protection is required when used frequently or in case of severe exposure.
Respiratory protection is classified from minimum to maximum concentration.
Consider warning characteristics before use.
Gas mask(direct connection-type small, for organic gas), direct connection-type small gas mask(canister for organic gas, full-faced), Air-purifying respirator(canister for organic gas, full-faced)
Unknown concentration or other imminent danger to life or health : air supplied respirator, air respirator
- Eye protection
Wear safety goggles protected from missile or hazardous liquid and install safety shower/eyewash station nearby the workplace.
- Hand protection
Wear suitable chemical resistant gloves.
- Body protection
Wear suitable chemical resistant clothes.

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9. Physical and chemical properties

- A. Appearance (physical state, color etc): Black viscous liquid, solid
- B. Odour : The unique odor of aromatic hydrocarbons
- C. Odour threshold : No data available
- D. PH : No data available
- E. Melting/freezing point : No data available
- F. Early boiling point/boiling point range : 170 – 220°C
- G. Flashing point : Under 30°C
- H. Evaporating speed : No data available
- I. Inflammability(solid, gas) : Not applicable
- J. Upper/lower limit of ignition or explosion range : No data available
- K. Steam pressure : No data available
- L. Solubility : Insoluble
- M. Vapor density : No data available
- N. Specific gravity : 1.03(25°C)
- O. N-octanol/water partition coefficient : No data available
- P. Self-ignition temperature : N-decane(210°C), Heptane(204°C), Octane(204°C), Cyclohexane(245°C) Methylcyclohexane(250°C), Toluene(480°C), Xylene(464–529°C)
- Q. Resolvability temperature : No data available
- R. Viscosity : No data available
- S. Molecular weight : No data available

10. Stability and reactivity

- A. Chemical stability and possibility of adverse reaction
 - Highly flammable liquid and vapor
 - Can decompose at high temperature and produce toxic gas.
 - May form explosive mixture at or above flash point.
 - Container may explode on heating.
 - Highly flammable: easily ignited by heat, spark and flame.
 - Leaked material can have fire/explosion hazard.
 - Vapor may explode indoors, outdoors, and in drains.
 - Vapor may form explosive mixtures with air.
- B. Conditions to avoid: Keep away from heat, spark, flame and high temperature (no smoking)
- C. Materials to avoid: Flammable materials, strong oxidizing agents
- D. Hazardous decomposition products: May cause irritating and highly toxic gases by combustion or pyrolysis during burning (corrosive/toxic fumes, irritant, toxic gases).

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11. Toxicological information

- A. Information about possible routes of exposure: Can be absorbed to body by vapor, inhalation and ingestion
May be fatal if swallowed and inflow to airway
Causes skin irritation
- B. Health hazard information
- Acute toxicity (oral) : Oxidized asphalt LD50 5000mg/m³ Rat, Stoddard solvent LD50>5000mg/kg Rat, Hydrogenated heavy naphtha LD50>15000 mg/kg Rat
 - Acute toxicity (skin) : Oxidized asphalt LD50 2000mg/kg Rabbit
Hydrogenated heavy naphtha LD50>3160mg/kg Rabbit
Benzene LD50>8200mg/kg Rabbit
Toluene LD50 120000mg/kg Rat
Xylene LD50 ≥4350mg/kg Rabbit
Ethylbenzene LD50 15400mg/kg Rabbit
 - Acute toxicity (inhalation): Benzene vapor LC50 44.66mg/l 4hr Rabbit
Toluene LC50 1.2mg/l 4hr Rat
Hexane LC50 12.5 mg/l 77000ppm 1hr
Xylene vapor LC50 6700ppm 4hr Rat
Ethylbenzene vapor LC50 400ppm 4hr Rat
 - Skin corrosion or irritation: Skin irritation Test in rabbit caused moderate irritation.
 - Severe eye damage or irritation: Eye irritation Test in rabbit caused moderate irritation.
 - Respiratory sensitization: No data available
 - Skin sensitization: Result of the Test in guinea pig - negative.
 - Carcinogenicity: Industrial Safety and Health Act Benzene Carcinogenicity
 - Germ cell mutagenicity: Reproductive cell in vivo dominant lethality Mutagenicity test result
- Negative, Somatic in vivo mutagenicity test result - Negative.
 - Reproduction-toxicity: Inhalation test during pregnancy in rats does not show definite reproductive toxicity
 - Target organ-systemic toxicant(single exposure): No data available
 - Target organ-systemic toxicant(repeated exposure): No data available
 - Aspiration hazard: Cause chemical pneumonia.
- C. Numerical measures of toxicity(such as estimates of acute toxicity): No data available

12. Ecological information

- A. Aquatic and Ecologic Toxicity
- Fish: Hydrogenated heavy naphtha LC50 2200mg/l 96hr Pimephales promelas
Benzene EC50 5.3mg/l 96hr Toluene LC50 24mg/l 96hr Xylene LC50 3.3mg/l 96hr
Ethylbenzene LC50 9.09mg/l 96hr
 - Crustacean: Stoddard solvent LC50=0.4~2.3mg/l 48
Hydrogenated heavy naphtha LC50 2.6mg/l 96hr Benzene EC50 10mg/l 48hr
Toluene EC50 11.5mg/l 48hr Hexane LC50 3.88mg/l 4hr
Xylene LC50 190mg/l 96hr Ethylbenzene LC50 0.4mg/l 96hr
- B. Persistence and degradability
- Persistence: Stoddard solvent log kow=3.16~7.06
Hydrogenated heavy naphtha log kow 2.1~6
Benzene log kow 2.13 Toluene log kow 2.73 Hexane log kow 3.9
 - degradability: May affect
- C. Bioaccumulation: May affect
- D. Soil mobility: May affect
- E. Other harmful effects: May affect

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13. Disposal consideration

A. Disposal methods

- If two or more designated wastes are mixed and it is difficult to separate them, they may be reduced or stabilized by incineration or similar methods.
- Pre-treat with oil-water separation method if possible.
- Incinerate.
- Separate oil and water. Incinerate the oil.
- Dispose the remaining water after separation at water pollution prevention facility.
- Incinerate or do stabilizing treatment after disposal by evaporation and concentration method.
- Incinerate residues after disposal by coagulation/precipitation method.
- Incinerate or do stabilizing treatment after refining process by separation, distillation, extraction, filter or pyrolysis.

B. Disposal considerations (including disposal method of contaminated containers and packaging)

- Waste oil containing oil more than 5% is classified as designated waste.
- Comply with detailed standards on Wastes Control Act.

14. Transport information

A. UN no.: UN NO, 1999

B. UN Proper Name: TARS. LIQUID

C. Hazard class in transport: 3

D. Packing grade(if applicable): II

E. Relevant pollutant(relevant/irrelevant): Irrelevant

F. Special safety measure which user should be aware about transport: No data available

15. Regulatory information

A. Restrictions by the Industry Safety & Health Law

The material need MSDS under Article 41 of the Industrial Safety and Health Act [Preparation of material safety data sheet etc.]

Exposure standard setting substance, Work environment measurement substance, Harmful substance to be controlled, Special health examination substance

B. Hazardous Chemical Substances Control Act

Not applicable

C. Regulation under dangerous goods safety management law

Category 4 petroleum 2

D. Regulation by waste management law

In accordance with Article 2 No. 4 of the Waste Management Act, if it contains more than 5%, it should be treated as designated waste.

E. Regulation by other foreign law: No data available

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16. Other information

A. Sources for data : KOREA PETROLEUM INDUSTRIES COMPANY, OCCUPATIONAL SAFETY AUTHORITY, SK GLOBAL CHEMICAL, DONGNAM PLASTICS.

B. Originated date

- 15. June, 1996

C. Final number of revision and revised date

- Final number of revision: 5

- Final-revised date: 18. Nov, 2016

D. Others

- This material is written based on the knowledge that our company currently has.

Purpose of this is for supply information for health, safety and environment.

Please note that all the contents written here does not mean Spec or guarantee of product.