

## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** ASPHALT EMULSION CMS-2h  
**Product Description:** Asphalt emulsion  
**Product Code:** 1010902020E0, 282111-88  
**Recommended Use:** Mainly used for road paving, Miscellaneous industrial applications

#### COMPANY IDENTIFICATION

**Supplier:** Esso (Thailand) Public Company Limited  
3195/17-29 Rama IV Road, Klong Ton  
Klong Toey District  
Bangkok 10110 Thailand

|                                    |                                       |
|------------------------------------|---------------------------------------|
| <b>24 Hour Emergency Telephone</b> | 001-800-13-203-9987 / +1-703-527-3887 |
| <b>Supplier General Contact</b>    | 662-407-4000                          |
| <b>FAX</b>                         | 662-407-4800                          |

### SECTION 2 HAZARDS IDENTIFICATION

This material is hazardous according to regulatory guidelines (see (M)SDS Section 15).

#### CLASSIFICATION:

Acute aquatic toxicant: Category 3. Chronic aquatic toxicant: Category 3.

#### LABEL ELEMENTS:

**Pictograms:** No Pictograms

**Signal Word:** No Signal Word

#### Hazard Statements:

H412: Harmful to aquatic life with long lasting effects.

#### Precautionary Statements:

P273: Avoid release to the environment.

P501: Dispose of contents and container in accordance with local regulations.

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**Other hazard information:**

**PHYSICAL / CHEMICAL HAZARDS**

Contact with hot material can cause thermal burns which may result in permanent damage. Contact with hot material can cause thermal burns which may result in permanent damage or blindness. Thermal burn hazard - contact with hot material may cause thermal burns.

**HEALTH HAZARDS**

High-pressure injection under skin may cause serious damage. Excessive exposure may result in eye, skin, or respiratory irritation.

**ENVIRONMENTAL HAZARDS**

No additional hazards.

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

|                  |   |
|------------------|---|
| <b>SECTION 3</b> | <b>COMPOSITION / INFORMATION ON INGREDIENTS</b> |
|------------------|---|

This material is defined as a mixture.

**Hazardous Substance(s) or Complex Substance(s) required for disclosure**

| Name                                   | CAS#       | Concentration<br>* | GHS Hazard Codes   |
|--|------------|--------------------|--|
| AMINES, N-TALLOW ALKYLTRIMETHYLENEDI-  | 61791-55-7 | 0.1 - < 1%         | H302, H314(1B),<br>H400(M factor 1)                          |
| HEAVY STRAIGHT RUN NAPHTHA (PETROLEUM) | 64741-41-9 | 1 - 10%            | H224, H304, H336,<br>H340(1B), H350(1B),<br>H315, H401, H411 |

\* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

NOTE: Nota P of Annex 1 applies to the material or one of its components. Benzene concentration < 0.1% (w/w).

|                  |                           |
|------------------|---------------------------|
| <b>SECTION 4</b> | <b>FIRST AID MEASURES</b> |
|------------------|---------------------------|

**INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by

a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury. For hot product: Immediately immerse in or flush affected area with large amounts of cold water to dissipate heat. Cover with clean cotton sheeting or gauze and get prompt medical attention.

#### EYE CONTACT

Flush thoroughly with water for at least 15 minutes. Get medical assistance.

#### INGESTION

Seek medical attention.

#### NOTE TO PHYSICIAN

This material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.

### SECTION 5 FIRE FIGHTING MEASURES

#### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use dry chemical, carbon dioxide (CO<sub>2</sub>), or a dry, non-combustible material such as dry sand or earth to extinguish flames.

**Inappropriate Extinguishing Media:** Straight streams of water

#### FIRE FIGHTING

**Fire Fighting Instructions:** Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Hazardous Combustion Products:** Asphalt fumes, Hydrogen sulphide, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

#### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** N/A

**Flammable Limits (Approximate volume % in air):** LEL: N/A UEL: N/A

**Autoignition Temperature:** N/D

### SECTION 6 ACCIDENTAL RELEASE MEASURES

#### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

#### PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification

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Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: half-face or full-face respirator with filter(s) for organic vapor and, when applicable, H<sub>2</sub>S, or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Chemical goggles and face shield are recommended if contact of eyes with hot product or vapours is possible. Small spills: normal work clothes are usually adequate. Large spills: full body suit of chemical and thermal resistant material is recommended. Work gloves (preferably gauntlet style) that provide adequate chemical resistance. Note: gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. If contact with hot product is possible or anticipated, heat-resistant and thermally insulated gloves are recommended.

## SPILL MANAGEMENT

**Land Spill:** Stop leak if you can do so without risk. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. If liquid is too viscous for pumping, shovel it up into a suitable container for recycle or disposal.

**Water Spill:** Seek advice of a specialist. This product emulsifies, disperses or is miscible in water.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

## ENVIRONMENTAL PRECAUTIONS

Large Spills: Dyke far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

## HANDLING AND STORAGE

### HANDLING

Emulsion is not flammable although it can boil violently if overheated in an enclosed space or in contact with conventional hot bitumen.

When heating to normal handling temperatures, avoid local overheating. Prevent small spills and leakage to avoid slip hazard.

**Loading/Unloading Temperature:** < 90°C (194°F)

**Static Accumulator:** N/D

### STORAGE

Do not store in open or unlabelled containers. Do not allow material to freeze.

**Storage Temperature:** < 90°C (194°F)

## SECTION 8

## EXPOSURE CONTROLS / PERSONAL PROTECTION

## EXPOSURE LIMIT VALUES

### Exposure limits/standards (Note: Exposure limits are not additive)

| Substance Name                   | Form                | Limit/Standard |                       | Note | Source |
|----------------------------------|---------------------|----------------|-----------------------|------|--------|
| Asphalt fumes [benzene solubles] | Inhalable fraction. | TWA            | 0.5 mg/m <sup>3</sup> |      | ACGIH  |

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

## ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

## PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

Positive-pressure, air-supplied respirator in areas where H<sub>2</sub>S vapours may accumulate is recommended. Acid gas/organic vapour, HEPA

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. Viton

**Eye Protection:** If contact with material may occur, safety glasses and face shield are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and

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protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Liquid  
**Colour:** Dark Brown  
**Odour:** N/D  
**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.98  
**Flammability (Solid, Gas):** N/A  
**Flash Point [Method]:** N/A  
**Flammable Limits (Approximate volume % in air):** LEL: N/A UEL: N/A  
**Autoignition Temperature:** N/D  
**Boiling Point / Range:** N/D  
**Decomposition Temperature:** N/D  
**Vapour Density (Air = 1):** N/D  
**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** 2.5 - 4  
**Log Pow (n-Octanol/Water Partition Coefficient):** N/D  
**Solubility in Water:** Disperses  
**Viscosity:** <1000 cSt (1000 mm<sup>2</sup>/sec) at 40°C  
**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** Freezing temperatures.

**MATERIALS TO AVOID:** Alkalies, Halogens, Strong Acids, Strong oxidisers

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**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**POSSIBILITY OF HAZARDOUS REACTIONS:** Hazardous polymerization will not occur.

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|-------------------|----------------------------------|
| <b>SECTION 11</b> | <b>TOXICOLOGICAL INFORMATION</b> |
|-------------------|----------------------------------|

**ACUTE TOXICITY**

| Route of Exposure                           | Conclusion / Remarks   |
|---|--|
| <b>Inhalation</b>                           |  |
| Toxicity: No end point data for material.   | Minimally Toxic. Based on assessment of the components.  |
| Irritation: No end point data for material. | Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. |
| <b>Ingestion</b>                            |  |
| Toxicity: No end point data for material.   | Minimally Toxic. Based on assessment of the components.  |
| <b>Skin</b>                                 |  |
| Toxicity: No end point data for material.   | Minimally Toxic. Based on assessment of the components.  |
| Irritation: No end point data for material. | Negligible irritation to skin at ambient temperatures. Based on assessment of the components.  |
| <b>Eye</b>                                  |  |
| Irritation: No end point data for material. | May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.   |

**OTHER HEALTH EFFECTS FROM SHORT AND LONG TERM EXPOSURE**

Anticipated health effects from sub-chronic, chronic, respiratory or skin sensitization, mutagenicity, reproductive toxicity, carcinogenicity, target organ toxicity (single exposure or repeated exposure), aspiration toxicity and other effects based on human experience and/or experimental data.

**For the product itself:**

Exposure to this material, or one of its components, in situations where there is the potential for high levels, such as in confined spaces or with abuse, may result in abnormal heart rhythm (arrhythmia). High-level exposure to hydrocarbons (above occupational exposure limits) may initiate arrhythmia in a worker that is undergoing stress or is taking a heart-stimulating substance such as epinephrine, a nasal decongestant, or an asthma or cardiovascular drug.

**Asphalt:** May contain low levels of polycyclic aromatic compounds (PACs), some of which are suspected of causing cancer under conditions of poor industrial hygiene and prolonged repeated contact. These PACs may also be inhaled. Inhalation studies at high concentrations of fumes resulted in bronchitis, pneumonitis, fibrosis and cell damage. Avoid contact with the asphalt and inhalation of vapour or aerosol from it. **HYDROGEN SULPHIDE:** Chronic health effects due to repeated exposures to low levels of H<sub>2</sub>S have not been established. High level (700 ppm) acute exposure can result in sudden death. High concentrations will lead to cardiopulmonary arrest due to nervous system toxicity and pulmonary edema. Lower levels (150 ppm) may overwhelm sense of smell, eliminating warning of exposure. Symptoms of overexposure to H<sub>2</sub>S include headache, fatigue, insomnia, irritability, and gastrointestinal problems. Repeated exposures to approximately 25 ppm will irritate mucous membranes and the respiratory system and have been implicated in some eye

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damage.

**IARC Classification:**

**The following ingredients are cited on the lists below:** None.

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

|                   |                               |
|-------------------|-------------------------------|
| <b>SECTION 12</b> | <b>ECOLOGICAL INFORMATION</b> |
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The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

**ECOTOXICITY**

Material -- Expected to be harmful to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Majority of components -- Expected to be persistent.

**Atmospheric Oxidation:**

More volatile component -- Expected to degrade rapidly in air

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|-------------------|--------------------------------|
| <b>SECTION 13</b> | <b>DISPOSAL CONSIDERATIONS</b> |
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Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

**DISPOSAL RECOMMENDATIONS**

Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with



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governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

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|-------------------|------------------------------|
| <b>SECTION 14</b> | <b>TRANSPORT INFORMATION</b> |
|-------------------|------------------------------|

**LAND :** Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**Marine Pollutant:** No

**AIR (IATA):** Not Regulated for Air Transport

|                   |                               |
|-------------------|-------------------------------|
| <b>SECTION 15</b> | <b>REGULATORY INFORMATION</b> |
|-------------------|-------------------------------|

This material is considered hazardous according to the classification criteria of the Hazard Classification and Communication System for Hazardous Materials BE 2555.

**REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS**

**Hazardous Substance Act BE2535:** Not Regulated

**Listed or exempt from listing/notification on the following chemical inventories (May contain substance(s) subject to notification to the EPA Active TSCA inventory prior to import to USA):** AICS, DSL, IECSC, KECI, PICCS, TSCA

|                   |                          |
|-------------------|--------------------------|
| <b>SECTION 16</b> | <b>OTHER INFORMATION</b> |
|-------------------|--------------------------|

**N/D = Not determined, N/A = Not applicable**

**KEY TO THE H-CODES CONTAINED IN SECTION 3 OF THIS DOCUMENT (for information only):**

H224: Extremely flammable liquid and vapor; Flammable Liquid, Cat 1  
H302: Harmful if swallowed; Acute Tox Oral, Cat 4  
H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1  
H314(1B): Causes severe skin burns and eye damage; Skin Corr/Irritation, Cat 1B  
H315: Causes skin irritation; Skin Corr/Irritation, Cat 2  
H336: May cause drowsiness or dizziness; Target Organ Single, Narcotic  
H340(1B): May cause genetic defects; Germ Cell Mutagenicity, Cat 1B  
H350(1B): May cause cancer; Carcinogenicity, Cat 1B  
H400: Very toxic to aquatic life; Acute Env Tox, Cat 1  
H401: Toxic to aquatic life; Acute Env Tox, Cat 2

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H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

- Section 01: Company Contact Methods information was modified.
- Section 04: First Aid Notes information was modified.
- Section 05: Fire Fighting Measures - Fire Fighting Instruction information was modified.
- Section 05: Hazardous Combustion Products information was modified.
- Section 06: Protective Measures information was modified.
- Section 07: Handling and Storage - Handling information was modified.
- Section 10: Materials To Avoid information was modified.
- Section 11: Other Health Effects information was modified.
- Section 12: information was modified.
- Section 14: Marine Pollutant information was modified.

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