# HOT MIX ASPHALT PAVEMENT

# SAFETY DATA SHEET

OSHA HCS (29 CFR 1910.1200)

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

| | |
|---|---|
| **Product identifier** | Hot Mix Asphalt Pavement |
| Chemical Name | Mixture |
| CAS No. | Mixture |
| Trade Name(s) | Petroleum Asphalt / Road Paving Asphalt / Hot Mix Asphalt / Blacktop / Bitumen / Warm Mix Asphalt / Base Asphalt Pavement |

**Relevant identified uses of the substance or mixture and uses advised against**

| | |
|---|---|
| Identified Use(s) | Road Paving Asphalt |
| Uses Advised Against | None. |

**Details of the supplier of the safety data sheet**

| | |
|---|---|
| Company Identification | O&G Industries<br>112 Wall Street<br>Torrington, Connecticut 06790 |
| Telephone | (860) 489-9261 |

**Emergency telephone number**

| | |
|---|---|
| Emergency Phone No. | Not classified as dangerous for supply/use. Please contact the supplier above during normal business hours. |

## SECTION 2: HAZARDS IDENTIFICATION

**Classification of the substance or mixture**

| | |
|---|---|
| OSHA HCS (29 CFR 1910.1200) / GHS Classification | Not classified as dangerous for supply/use. |

**Label elements**

| | |
|---|---|
| Hazard Symbol | None |
| Signal Word(s) | None |
| Hazard Statement(s) | None |
| Precautionary Statement(s) | None |

**Other hazards**

May cause eye irritation.

Prolonged exposure to fumes without adequate ventilation to fumes may cause upper respiratory irritation (nose & throat) .

Skin contact may increase susceptibility to sunburn.

Poisonous hydrogen sulfide gas can accumulate in the head-space of containers of certain asphalt products.

Mechanical disruption (e.g., milling, cutting, chipping) of cured asphalt pavement may release crystalline silica dust from the aggregate.

**Additional Information**

Avoid prolonged exposure to (dust/fume/gas/mist/vapors/spray) without adequate ventilation.

As necessary, wear protective gloves/protective clothing/eye protection/face protection.

Wash hands and exposed skin after use.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

| Composition/information on ingredients | % wt. | CAS No. |
|---|---|---|
| Aggregate (crushed stone, sand, gravel, slag) | 70 - 97 | Various |
| Petroleum asphalt / bitumen^ | 3 - 7 | 8052-42-4 |
| Reclaimed Asphalt Pavement (RAP) | 0 - 45 | Mixture |
| Reclaimed Asphalt Shingles (RAS) | 0 - 10 | Mixture |
| Polymers and Natural Rubbers | < 0.5 | Various |
| Process oils (inherent in refined petroleum asphalt) | < 0.1 | Various |
| Anti-strip or other amine-based additives | < 0.1 | Various |
| Warm-mix additives | < 0.1 | Various |

^Contains: <0.05% of 3 - 7 ring Polycyclic Aromatic Hydrocarbons (PAHs).

Other Substances in the product which may present a health or environmental hazard, or which have been assigned occupational exposure limits, are detailed below. Please see Section 8 of SDS for more details.

- Contains: <0.1% airborne crystalline silica (inherent in aggregate) and <0.1% hydrogen sulfide.
- Hydrogen sulfide gas can accumulate in the head space of containers of certain asphalt products.
- Heated product releases asphalt fume.

**Additional Information -** None

## SECTION 4: FIRST AID MEASURES

**Description of first aid measures**

| | |
|---|---|
| Inhalation | Not normally required. Move person to fresh air. Apply artificial respiration if necessary. If symptoms persist, obtain medical attention. |
| Skin Contact | Causes burns. Immediately cool skin where asphalt binder has adhered to skin. Allow asphalt binder which remains on the skin to fall off naturally. DO NOT REMOVE. If problem persist or coverage is extensive, get medical attention. |
| Eye Contact | Flush eyes with water for at least 15 minutes while holding eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation develops and persists, get medical attention. |
| Ingestion | Not normally required. Do not induce vomiting. Do not give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell. |
| **Most important symptoms and effects, both acute and delayed** | None known |
| **Indication of any immediate medical attention and special treatment needed** | None known |

## SECTION 5: FIRE-FIGHTING MEASURES

**Extinguishing Media**

| | |
|---|---|
| -Suitable Extinguishing Media | Extinguish with carbon dioxide, dry chemical, foam or water spray. |
| -Unsuitable Extinguishing Media | None anticipated. |

**Special hazards arising from the substance or mixture** — Combustion causes toxic fumes. Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides

**Advice for fire-fighters** — A self contained breathing apparatus and suitable protective clothing should be worn in fire conditions.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

| | |
|---|---|
| **Personal precautions, protective equipment and emergency procedures** | Avoid contact with skin and eyes. |
| **Environmental precautions** | Not normally required. |
| **Methods and material for containment and cleaning up** | Allow product to cool/solidify and pick up as a solid. |
| **Reference to other sections** | None |
| **Additional Information** | None. |

## SECTION 7: HANDLING AND STORAGE

**Precautions for safe handling** — Avoid contact with skin and eyes.

**Conditions for safe storage, including any incompatibilities**

| | |
|---|---|
| -Storage temperature | Store at temperatures not exceeding the product's flash point. |
| -Incompatible materials | Strong oxidizing agents. |

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

**Control parameters**

**Occupational Exposure Limits**

| SUBSTANCE. | CAS No. | (8hr TWA) | | (STEL) | | Note: |
|---|---|---|---|---|---|---|
| | | PEL (OSHA) * | TLV (ACGIH) | PEL (OSHA) | TLV (ACGIH) | |
| Asphalt fume | ------ | ------ | 0.5 mg/m3 (I) | ------ | ------ | See below |
| Crystalline Silica (respirable particulate) | ------ | 0.050 mg/m3 (R) * | 0.025 mg/m3 ^ | ------ | ------ | See below |
| Hydrogen sulfide | 7783-06-4 | ------ | 1 ppm | 20 ppm ceiling | 5 ppm | 50 ppm peak |

(I) Inhalable benzene-soluble fraction; (R)Respirable fraction; ^Suspected Human Carcinogen; * OSHA Carcinogen - employers must ensure compliance with OSHA 29 CFR 1926.1153 - Respirable Crystalline Silica, as applicable.; TWA = 8 hour time-weighted average; STEL = Short Term Exposure Limit.

**Recommended monitoring method** — NIOSH 5042 (Asphalt Fume), OSHA ID-142 (Crystalline Silica), Electrochemical sensor (hydrogen sulfide).

**Exposure controls**

**Appropriate engineering controls** — Use only outdoors or in a well-ventilated area.

**Personal protection equipment**

Eye/face protection — The following to be used as necessary: Safety Glasses

Skin protection (Hand protection/ Other) — The following to be used as necessary: Leather or thick textile gloves.

Respiratory protection — In case of inadequate ventilation wear respiratory protection. Use NIOSH approved respiratory protection. Air-purifying respirator with combination organic vapor cartridge / particulate filter may be sufficient. Check with protective equipment manufacturer's data.

Thermal hazards — Use gloves with insulation for thermal protection, when needed.

**Environmental Exposure Controls** — Do not discharge waste and/or cleaning water via public sewer system. Ensure waste is collected and contained.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

**Information on basic physical and chemical properties**

| | |
|---|---|
| Appearance | Solid |
| Color. | Dark brown / Black |
| Odor | Asphalt / Bitumen |
| Odor Threshold (ppm) | Not available. |
| pH (Value) | Not available. |
| Melting Point (°C) / Freezing Point (°C) | Not available. |
| Boiling point/boiling range (°C): | > 371 (>700 ºF) |
| Flash Point (°C) | > 232 (> 450 ºF) |
| Evaporation Rate | Not available. |
| Flammability (solid, gas) | Not applicable. |
| Explosive Limit Ranges | Not applicable. |
| Vapor pressure (Pascal) | Not determined. |
| Vapor Density (Air=1) | Not determined. |
| Density (g/ml) | 2.2 - 2.7 |
| Solubility (Water) | Negligible |
| Solubility (Other) | Not known |
| Partition Coefficient (n-Octanol/water) | Not available. |
| Auto Ignition Point (°C) | Not available. |
| Decomposition Temperature (°C) | Not available. |
| Kinematic Viscosity (cSt) @ 40°C | Not available |
| Explosive properties | Not explosive. |
| Oxidizing properties | Not oxidizing. |

**Other information** — Not available.

## SECTION 10: STABILITY AND REACTIVITY

**Reactivity** — Stable under normal conditions.

**Chemical stability** — Stable.

| | |
|---|---|
| **Possibility of hazardous reactions** | May react violently with: Strong oxidizing agents |
| **Conditions to avoid** | Incompatible materials |
| **Incompatible materials** | Oxidizers |
| **Hazardous decomposition product(s)** | Combustion causes toxic fumes. Combustion products: Carbon monoxide, Carbon dioxide, Nitrogen oxides, Sulfur oxides |

## SECTION 11: TOXICOLOGICAL INFORMATION

**Exposure routes:** Inhalation, Skin Contact, Eye Contact

**Information on toxicological effects**

| | |
|---|---|
| Acute toxicity | LD50 (rat): >5000 mg/kg bw<br>LD50 (dermal): >2000 mg/kg bw<br>LC50 (inhalation, fume): >94.4 mg/m$^3$ |
| Irritation/Corrosivity | May cause irritation to skin, eyes and respiratory system. |
| Sensitization | Not to be expected |
| Repeated dose toxicity | NOAEL(rat): 28 mg/m$^3$<br>LOAEL (rat): 149 mg/m$^3$ |
| Carcinogenicity | Not to be expected at typical road paving temperatures. |

| NTP | IARC | ACGIH | OSHA |
|---|---|---|---|
| No. | Yes.* | No. | No. |

| | |
|---|---|
| Mutagenicity | Not to be expected. |
| Reproductive toxicity | Not to be expected. |

Other information * IARC (2013, volume 103) identifies that “occupational exposures to straight-run bitumens and their emissions during road paving are possibly carcinogenic to humans (Group 2B).” However, classification as a carcinogen under OSHA 29 CFR 1910.1200 is not warranted given the absence of positive cancer findings in human epidemiological studies and in cancer studies with laboratory animals when exposed dermally or by inhalation to asphalt products or fume condensates that are typical of road paving applications. IARC (2013, volume 103) also identifies that “occupational exposures to oxidized bitumens and their emissions during roofing are probably carcinogenic to humans (Group 2A).” Roofing shingles, which are considered an article under OSHA 29 CFR 1910.1200, are sometimes recycled into road paving asphalt mix. Emissions from oxidized bitumen, e.g., from shingles, at road paving temperatures are not expected to be qualitatively different than emissions from straight-run bitumens, and therefore would not warrant a carcinogen classification under OSHA 29 CFR 1910.1200. Contains crystalline silica, an OSHA-regulated carcinogen, inherent in the aggregate. ACGIH classifies crystalline silica as a *Suspected Human Carcinogen* (A2).

## SECTION 12: ECOLOGICAL INFORMATION

**Ecotoxicity**

| | |
|---|---|
| Short term | LL50 (48 hour): >1000 mg/l (Fish)<br>LL50 (48 hour): >1000 mg/L (Aquatic Invertebrates)<br>EL50 (48 hour): >1000 mg/L (Aquatic Plants) |
| Long Term | No data |
| **Persistence and degradability** | The product is poorly biodegradable. |
| **Bioaccumulative potential** | The product has low potential for bioaccumulation. |
| **Mobility in soil** | The product has low mobility in soil. |
| **Results of PBT and vPvB assessment** | Not classified as PBT or vPvB. |
| **Other adverse effects** | None known. |

## SECTION 13: DISPOSAL CONSIDERATIONS

**Waste treatment methods** — Disposal should be in accordance with local, state or national legislation. Consult this asphalt producer, permitted waste disposal contractor or the local authority for advice on waste disposal or recycling options.

**Additional Information** — None known.

## SECTION 14: TRANSPORT INFORMATION

**Ground or Water Domestic Voyage (DOT):** Not regulated when transported below 240°C (464 °F).

## SECTION 15: REGULATORY INFORMATION

**Safety, health and environmental regulations/legislation specific for the substance or mixture:**

**TSCA (Toxic Substance Control Act) -** Inventory Status**:** All components listed or polymer exempt.

**RCRA Hazardous Waste Number (40 CFR 261.33)**: None

**US RCRA Hazard Class:** Not applicable**.**

**Designated Hazardous Substances and Reportable Quantities (40 CFR 302.4)**:

| Chemical Name | CAS No. | Typical %wt. | RQ (Pounds) |
|---|---|---|---|
| None | ----- | ----- | ----- |

**SARA 311/312 - Hazard Categories:** None

☐ Fire ☐ Sudden Release ☐ Reactivity ☐ Immediate (acute) ☐ Chronic (delayed)

**SARA 313 - Toxic Chemicals (40 CFR 372):**

| Chemical Name | CAS No. | Typical %wt. |
|---|---|---|
| None | ----- | ----- |

**SARA 302 - Extremely Hazardous Substances(40 CFR 355):**

| Chemical Name | CAS No. | Typical %wt. | TPQ (pounds) |
|---|---|---|---|
| None | ----- | ----- | ----- |

## SECTION 16: OTHER INFORMATION

**Additional Information**

**The following sections contain revisions or new statements:** 1 - 16

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