



## ASPHALT SHINGLE DISPOSITION PLAN



*For pre-consumer manufactured asphalt shingles to be recycled (RAS) located at:*

### **WEST SIDE QUARRY LLC**

6655 SW Hergert Road  
Cornelius, Oregon 97113  
Washington County Tax Lot 1S3200000405

ODEQ Case No. WQ/SW-NWR-2019-171

**Prepared for:**

### **West Side Quarry LLC**

PO Box 1060  
Woodburn, Oregon 97071

**Issued on:**

September 1, 2021  
EVREN NORTHWEST, INC.  
Project No. 1350-20001-02

*This*

## Asphalt Shingle Disposition Plan

*For pre-consumer manufactured asphalt shingles to be recycled (RAS) located at:*

*Source Facility:*

### **WEST SIDE QUARRY**

6655 SW Hergert Road  
Cornelius, Oregon 97113

*Washington County Parcel: 1S3200000405*

*Receiving Facility:*

### **LAURELWOOD QUARRY**

14375 NE Cunningham Lane  
Gaston, OR 97119

*Yamhill County Parcel: 2317-1000*

*Has been prepared for the sole benefit and use of our Client:*

### **West Side Quarry LLC**

PO Box 1060  
Woodburn, Oregon 97071

*Issued September 1, 2021 by:*



#### **Limitations**

This Asphalt Shingle Disposition Plan (Plan) is reflective of site current site conditions as of the publication of this Plan. Required actions described in this Plan are consistent with State of Oregon and Department of Geology and Mineral Industries regulations and guidance available as of the date of issue. The user of this Plan is advised to check for any updates that may be applicable to a specific scope of work being conducted under this Plan.

EVREN Northwest, Inc. is not responsible for conditions or consequences arising from information not available at the time of Plan preparation. This Plan was prepared in accordance with generally accepted professional practice. No other warranty, either expressed or implied, is made.

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## 1.0 Introduction

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EVREN Northwest, Inc. (ENW) has Prepared this *Asphalt Shingle Disposition Plan (Plan)* for the West Side Quarry (Figures 1; subject site). This Plan describes the source site, receiving site, tonnage of pre-consumer manufactured asphalt shingle and volume of ground asphalt shingle to be recycled (RAS), and schedule of activities. This Plan also describes the site-specific beneficial use determination for one of these RAS-related materials. This Plan was developed in response to communications with the Oregon Department of Environmental Quality (ODEQ) and Oregon Department of Geology and Mineral Industries (DOGAMI).

This Plan was prepared at the request of West Side Quarry LLC, one of the “West Side Entities” comprised of: (1) Columbia Northwest Recycling, Inc. (doing business as Construction Materials Recycling), (2) West Side Quarry LLC, (3) Westside Redi-Mix & Rock, Inc. (formerly known as Westside Rock, Inc.), and (4) Westside Rock & Reclaim, LLC (collectively herein the “West Side Entities”).

## 2.0 Purpose

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This Plan has been prepared to meet the requirements of the ODEQ’s Beneficial Use of Solid Waste rules<sup>1</sup> which include demonstration that a proposed use is productive and will not cause an adverse impact. OAR 340-093-0030 contains definitions for acceptable risk level, beneficial use, beneficial use determination and sensitive environment. The rules also include standing pre-approved beneficial uses which meet certain conditions including a requirement to report the use to ODEQ. One of the standing beneficial uses listed in the rules include scrap asphalt roofing shingles used in new asphalt pavement.

### 2.1 Recycling Material Type Definitions

The following recycling material ‘types’ are defined by Type identifier (see Table 2-1, below) for a consistent understanding throughout this document.

**Table 2-1. Material Type Descriptions**

<b>Material Type</b>	<b>Description</b>
Type A	Pre-consumer manufactured asphalt shingles
Type B	Ground pre-consumer manufactured asphalt shingles
Type C	Asphalt pavement, consisting of weathered, consolidated asphalt derived from Type B material that is free of visible oil.

Type A, B and C materials are subject to this Plan.

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<sup>1</sup> Oregon Administrative Rules (OARs) 340-0093-0260 through -0290.

## 3.0 Source Facility

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The source facility is a large upland basalt quarry located in the southern part of the Tualatin Valley in western Washington County (Figure 1). The site is identified on Tax Map 1S320 in the SE quarter of Section 20, Township 1 South Range 3 West, and it is over 100 acres in total area.

Since at least April 1997, West Side Entities has conducted mining operations at the source facility under a DOGAMI operating permit. Mining operations reportedly ceased in or around early 2016 and mine reclamation was commenced. Sometime in early 2017, West Side Entities brought Type A material to the site as part of a supplementary recycling operation.

## 4.0 Beneficial Use Determinations

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### 4.1 Standing Beneficial Use Determination (Type A and B Materials)

Type A material comprises the vast majority of the asphalt shingle material on site (approximately 6000 cubic yards), this material remains predominantly in its manufactured form. Type B material is present on site in the equipment parking area (approximately seven cubic yards). The State of Oregon, under Oregon Administrative Rules (OAR) 340-093-0270, defines several Standing Beneficial Use Determinations, including:

- Asphalt shingle waste from roof tear-offs and manufacturer scrap as asphalt binder in asphalt mixtures.

Since Type A material is pre-consumer manufacturer scrap asphalt shingles and Type B material is ground pre-consumer manufacturer scrap asphalt shingles, both these materials qualify under the State's standing beneficial use for asphalt shingle waste.

### 4.2 Site-Specific Beneficial Use (Type C Material)

Type C material is present as the current equipment parking pavement surface (approximately six to eight inches thick and approximately 700 cubic yards). OAR 340-093-0030 defines a beneficial use as "the productive use of solid waste in a manner that will not create an adverse impact to public health, safety, welfare, or the environment." This material is substantially similar to asphalt paving and the proposed reuse of the material will be as binder for new asphalt paving at the receiving facility (Laurelwood Quarry, see Section 5.0). The characteristic that distinguishes beneficial uses from permitted disposal is that beneficial uses are productive. A Site-Specific Beneficial Use is being requested since it can be shown that the Type C material will be used productively, including:

- There is an identified or reasonably likely use for the material that is not speculative;
- The use is an effective substitute for a valuable raw material; and
- The use is in accordance with applicable engineering and industrial standards.

Specifically, the Site-Specific Beneficial Use should be granted for this material, given the following characteristics/site conditions:

- The proposed use as a binder in onsite asphalt paving is productive and the use of asphalt paving at the Laurelwood facility will not cause an adverse impact.
- The existing asphalt batch plant air quality permit (AQGP-007) anticipates the future use of RAS as a component of hot-mix production. Before starting any operations to incorporate RAS as a component of hot-mix production, notification will be provided to ODEQ for approval and requisite stack testing will be performed, as required by this permit.
- West Side Entities anticipates the following percentages of RAS incorporation for asphalt manufacturing at the receiving facility:
  - 5-6% binder with 1.5-inch aggregate base course. Most of the binder will be RAS, supplemented with liquid asphalt as needed to achieve optimum mix.
  - 5% RAS mixed with ¾-inch aggregate for the top friction course.
- The above percent use of RAS to be incorporated asphalt for onsite paving at the receiving facility (Laurelwood Quarry, see Section 5.0) meets or exceeds the specifications provided by the facility engineer.
- The characteristics of chemical staining present on the surface of Type C Material, as a result of drippage from parking equipment on this material, is substantially similar to components in the Type C Material as well as the future asphalt paving that this material will be processed to become (see Appendix A):
  - Shingles
    - Asphalt (10-40%)
    - Limestone (30-40%)
    - Mineral granules/backing sand/quartz (10-35%)
    - Fiberglass mat (0-5%)
    - Talc (2.5-5%)
    - Kaolin (1-2.5%)
    - Carbon Black (<2%)
    - Naphthenic oil (<2%)
    - Titanium dioxide (0.1-1%)
    - Iron (III) oxide (0.1-1%)
    - Iron oxide (0.1-1%)
    - Zinc dust (trace)
  - Equipment Fluids

- MOBILFLUID 424 (hydraulic/gearbox fluid)
  - Petroleum hydrocarbons with additives
  - Hazardous Substances:
    - Hydrotreated middle distillate (petroleum, <5%)
    - Zinc Alkyldithiophosphate (<2.5%)
    - Borate Ester (<1%)
- MOBIL DELVAC HDEO 15W-40 (Diesel engine oil)
  - Petroleum hydrocarbons with additives
  - Hazardous Substances:
    - Alkyl phenol <5%
    - Organo Moly-Sulfur Complex (<1%)
    - Zinc Alkyldithiophosphate (<2.5%)

The reuse of Type C material as asphalt paving can accommodate fractions of soil that would likely be incorporated in the material that is expected near the interface of this material and the underlying soil during its removal. To minimize the amount of soil adhering to the Type C material during its removal, removal of Type C material will take place during the late summer season, when the ground is dry and hard. Because of this, small quantities of soil that may be present in the Type C material will not be an issue for the intended use of this material at the receiving facility.

West Side Entities has completed an Application for Solid Waste Beneficial Use Determination, pending ODEQ approval (Attachment B).

## 5.0 Receiving Facility and Disposition/Reuse Location

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The receiving facility, Laurelwood Quarry, is operated by Western Rock Resources, LLC. The Laurelwood Quarry is located at 14375 NE Cunningham Lane in Gaston, Oregon 97119 (see Figure 2). The southern portion of this site is located in Yamhill County, whereas the northern portion of the site is located within Washington County. A significant portion of the property within Yamhill County's jurisdiction is designated Mineral Resource (MR-1). The area where the Type A and C materials will be temporarily stockpiled and existing Type B material at the West Side Quarry will be brought and incorporated into asphalt paving are within this MR-1 zoned area (see Figure 2). Within this area the Type A and C materials will be ground to Type B material and incorporated into asphalt. Yamhill County agreed that this Accessory Use to the asphalt batch plant at this facility is approved in the MR-1 zoned area of the facility on July 10, 2020 (see

Attachment C)<sup>2</sup>. Upon approval of this Plan, the mobile batch plant will be relocated to the Laurelwood Quarry as shown in Figure 2.

The reuse of these materials at this facility are consistent with the following beneficial uses:

- The grinding of Type A material with subsequent incorporation into asphalt paving is consistent with ODEQ pre-approved beneficial uses of asphalt shingles.
- The incorporation of Type B material into asphalt paving is consistent with ODEQ pre-approved beneficial uses of asphalt shingles.
- The grinding of Type C material with subsequent incorporation into asphalt paving is consistent with the Site-Specific beneficial use determination requested as part of this submittal and is substantially similar to the standing beneficial use determination for recycled asphalt paving.

**All Type A, B and C materials received from West Side Quarry will be placed within the “Asphalt Shingle Storage Area” identified on Figure 2.**

## 6.0 Schedule and Confirmation of Disposition

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Type A, B and C materials temporarily stockpiled at the West Side Quarry facility will be transported to the Laurelwood facility on or before October 15, 2021. The Type A, B and C materials received from the West Side Quarry facility will be stored separate from any additional similar material received at the Laurelwood facility from other sources. Type B and C will be used as asphalt paving at the Laurelwood facility. Type A material will be ground as necessary to create additional feedstock for asphalt production. All Type A, B and C material will either be recycled and/or disposed of at a permitted facility prior to October 15, 2022, or the receiving facility will obtain a Solid Waste Transfer Station permit to retain the material beyond this date.

Following removal of these materials from the West Side Quarry, ODEQ will be notified in order to allow scheduling an inspection to confirm removal of this material. Unless a Solid Waste Transfer Station permit has been issued to the benefit of the receiving facility, prior to October 15, 2022, West Side Entities will provide ODEQ with a summary of use and residual volumes of each type of material at the Laurelwood facility transferred from the West Side Quarry facility.

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<sup>2</sup> Yamhill County, July 10, 2020. Letter in response, agreeing that the recycling of asphalt shingles is an approved accessory use in the MR-1 zone.



## 7.0 Protocol for Type A, B and C Material Placement and Recycling

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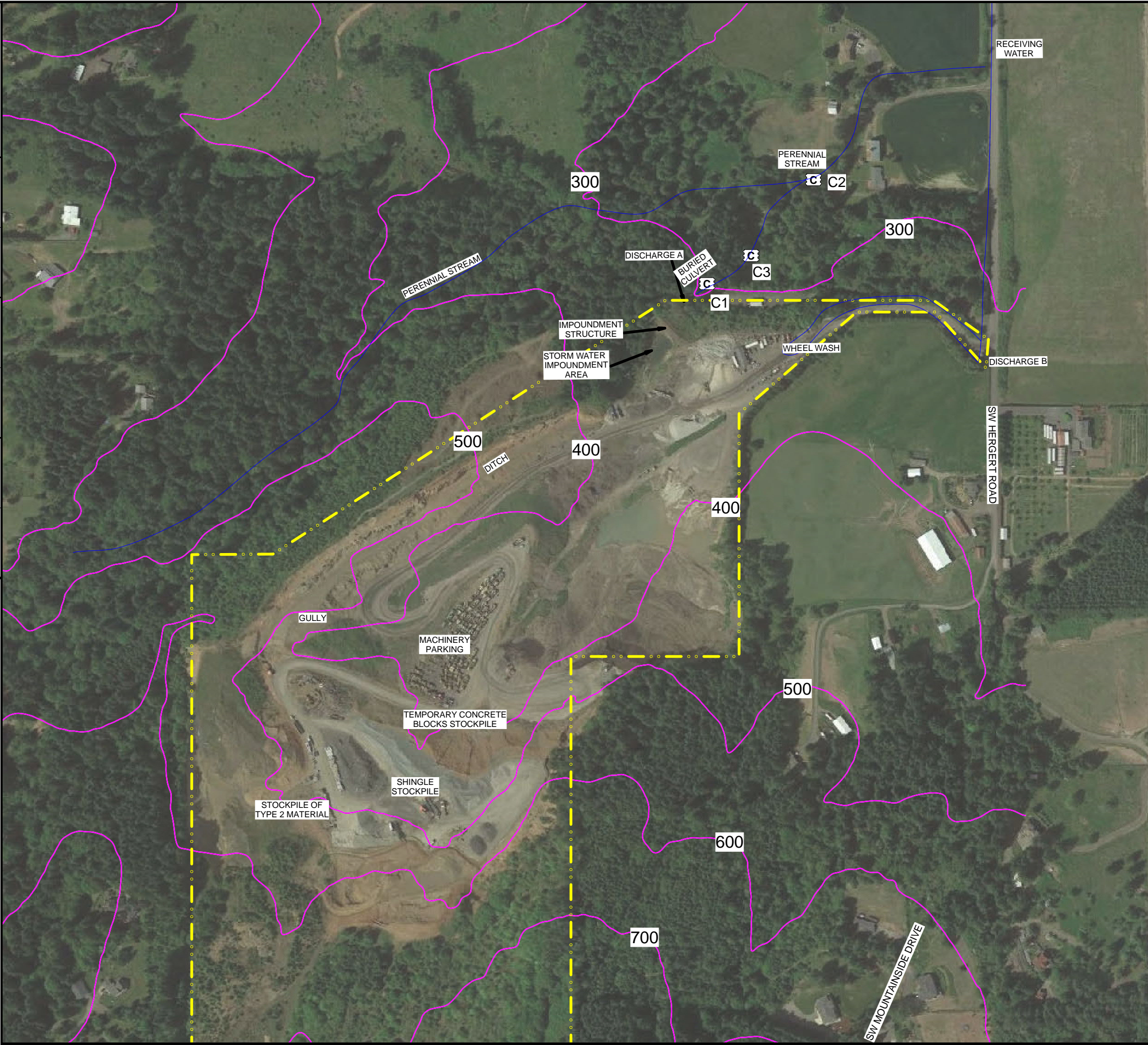
Removal of Type A, B and C materials from West Side Quarry and transport to Laurelwood Quarry will adhere to the following:

1. Type A, B and C materials will be transported from the West Side Quarry to the Laurelwood Quarry.
2. Type A, B and C material will be placed within the 'Asphalt Shingle Storage Area' identified on Figure 2.
3. Type B and C materials will be incorporated into asphalt pavement for permanent placement into the roads and parking areas at the Laurelwood Quarry within a year of being received at the facility.
4. Once a sufficient supply of Type A material is sourced and stockpiled, the Type A material will then be ground into a useable, asphalt plant manageable size (Type B material). Once ground, the material will be incorporated into an asphalt pavement product within a year of being received at the facility. Asphalt pavement created from Type A material may be used at Laurelwood or elsewhere and will not be subject to any site-specific restrictions on placement. The materials transferred to the Laurelwood Facility from the West Site Quarry will either be: 1) consumed as asphalt pavement on or before October 15, 2022, 2) be transferred to a permitted solid waste facility, or 3) the Laurelwood Facility will have received a Solid Waste Transfer Station permit allowing stockpiling of this material for a greater length of time.
5. Subsequently production Type B material at the Laurelwood Quarry will then be incorporated into new asphalt material for construction projects, ready for sale and paving into road improvement projects regionally.
6. Type B material will not be stored at the Laurelwood Quarry facility for a period longer than one year unless a Solid Waste Transfer Station permit has been initiated and approved.
7. Existing Type B material, or later-generated Type B material, when not being actively worked into the batch plant or incorporated into onsite asphalt paving at the Laurelwood Quarry facility, will be covered with tarpaulin to minimize contact with storm water.

## *FIGURES*

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DRAWN BY: C. ROSEBROOK 08/31/2020  
 CHECKED BY: E. CHAPMAN 08/14/2020  
 APPROVED BY: L. GREEN 10/11/2020  
 DRAWING NUMBER: 1350-20001(v01)

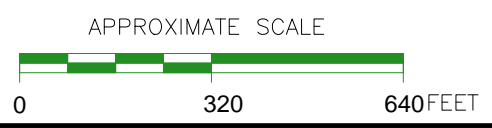


LEGEND:

- SUBJECT PROPERTY BOUNDARIES
- CULVERT
- SEEP
- TOPOGRAPHIC CONTOURS (100 FOOT INTERVALS)
- C1 CULVERT ON VANAKIN PROPERTY
- C2 CULVERT FROM CONFLUENCE OF DRAINAGES
- C3 OUTLET FROM C1

NOTES:

1. BASE MAP DEVELOPED FROM AN AERIAL PHOTOGRAPH MAP DATED 2019 AND ENW FIELD NOTES.
2. ALL BUILDING, STREET, AND FEATURE LOCATIONS ARE APPROXIMATE.
3. SYMBOLS REPRESENT LOCATION AND DO NOT ALWAYS REPRESENT EXACT SHAPE, SIZE, OR ORIENTATION.

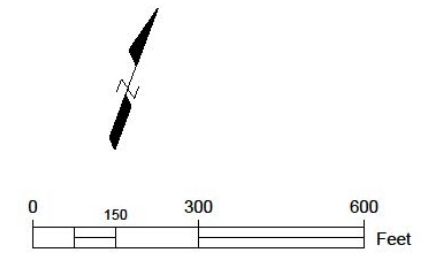


PO BOX 14488, PORTLAND, OREGON 97293  
 P: (503)452-5561, E: ENW@EVREN-NW.COM

FIGURE 1

SITE PLAN

WEST SIDE QUARRY LLC  
 6655 HERGERT ROAD  
 CORNELIUS, OREGON



Date Drawn: 6/15/2021  
 CAD File Name:  
 Drawn By: CLR  
 Approved By: LDG

Laurelwood Quarry  
 14375 NE Cunningham Lane  
 Gaston, Oregon

### Site Plan (Asphalt Shingle Storage Area)

Project No.  
 1350-20002  
 Figure No.  
 2

*ATTACHMENT A*  
*Safety Data Sheets*

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**SECTION 1 - PRODUCT & COMPANY IDENTIFICATION**

Name: **605 Paragon® PLUS Base**  
 Product Number: **605**  
 Class: **Manufactured Asphalt Roofing Products**  
 Company Address: 3131 N. Columbia Blvd., Portland, OR 97217-7472 • P.O. Box 17217, Portland, OR 97217-0217  
 Telephone: (503) 283-1191 • 1-800-545-1191 Fax: (503) 289-7644 Website: [WWW.MALARKEYROOFING.COM](http://WWW.MALARKEYROOFING.COM)

**SECTION 2 - HAZARDOUS INGREDIENTS**

None %Volatile Volume: <0.5%  
 %Water Volume: <0.1%

**SECTION 3 - HAZARDS IDENTIFICATION**

**Emergency Overview:** This product contains asphalt. Some asphalt contains sulfur compounds which may form H2S when heated or burnt.  
**Potential Health Effects:**  
**Skin:** Contact not known to cause skin irritation unless product is heated  
**Eyes:** Contact not known to cause eye irritation unless product is heated  
**Ingestion:** May be harmful if swallowed. No known issues in normal use  
**Inhalation:** No known inhalation issues in normal use

**SECTION 10 - STABILITY & REACTIVITY**

**Chemical Stability:** Stable under normal condition  
**Conditions to Avoid:** Incomplete Combustion  
**Incompatible Materials:** Strong Oxidants  
**Hazardous Decomposition Products:** May form CO2, NOx, SOx  
**Hazardous Polymerization:** Will not occur

**SECTION 4 - FIRST AID MEASURES**

**Eye:** Wash eyes with water thoroughly  
**Skin:** Wash after skin contact  
**Ingestion:** Ingestion is not considered a potential route of exposure  
**Inhalation:** None known

**SECTION 11 - TOXICOLOGICAL INFORMATION**

**Acute Toxicity:** None  
**Repeated Dose Effects:** None  
**Sensitization:** None  
**Carcinogenicity:** The IARC Monographs (Vol. 35) reporting on mice painting studies states that there is sufficient evidence for the carcinogen in experimental animals of extracts of some asphalts. The same document states that there is inadequate evidence that asphalts alone are carcinogenic to humans

**SECTION 5 - FIRE FIGHTING MEASURES**

**Flash Point:** N/A  
**Qualitative Flammable & Reactivity Properties:** Non Flammable  
**Suitable Extinguishing Media:** CO2, Dry Chem, Water  
**Unsuitable Extinguishing Media:** None known  
**Guidance to Fire Fighters:** N/A  
**PPE & Precautions for Fire Fighters:** Avoid confined space w/o proper equipment

**SECTION 12 - ECOLOGICAL INFORMATION**

**Ecotoxicity:** None

**SECTION 13 - DISPOSAL CONSIDERATION**

Contact the local authority, comply with local code

**SECTION 6 - ACCIDENTAL RELEASE MEASURES**

**Clean Up Techniques:** None  
**Personal Precautions:** See Section 8  
**Environmental Precautions:** None

**SECTION 14 - TRANSPORT INFORMATION**

**Shipping Name:** Not Regulated  
**Labeling:** Not Required  
**Hazard Class:** N/A

**SECTION 7 - HANDLING & STORAGE**

**Handling & Storage:** Precautions to be taken in handling and storing. Do not store near flame

**SECTION 15 - REGULATORY INFORMATION**

All Components of this products are on the TSCA inventory or are exempt from TSCA inventory requirements under 40 CFR 720.30

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Exposure Guidelines:** Exposure Limit Values: TLV- 5mg/m<sup>3</sup> PEL: N/A  
**Engineering Controls:** Do not store near flame  
**PPE:**  
Eye: Recommended but not required  
Skin: Protective gloves are recommended but not required. Wear apron.  
Respiratory: Not normally required  
**General Hygiene Considerations:** Washing facility recommended

**SECTION 16 - OTHER INFORMATION**

**HMIS Rating:**  
**Health:** 0 **Flammability:** 1 **Reactivity:** 0 **PPE:** A  
**Note:** PPE: Personal Protective Equipment  
 N/A: Not Applicable  
 NDA: No Data Available

**SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES**

**Boiling Range:** 650-1000° F  
**Melting Point:** N/A  
**Vapor Pressure:** N/A  
**Vapor Density:** N/A  
**Evaporation Rate:** N/A  
**Specific Gravity:** >1.0 g/ml

**Disclaimer:**

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Malarkey Roofing Products. The data on this sheet are related only to the specific material designated herein. Malarkey Roofing Products assumes no legal responsibility for use or reliance upon these data.

**Safety Data Sheet**  
Acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: February 27, 2018

Revision: February 27, 2018

**1 Identification**

· **Product identifier**

· **Trade name: Algae Resistant Shingles / Hip & Ridge / Starter Shingles**

· **Other product identifiers:**

10" MountainRidge® AR  
Arcadia Shake® AR  
Belmont® (AR only)  
Belmont® IR (AR only)  
Carriage House ® (AR only)  
Cedar Crest® (AR only)  
Cedar Crest® IR (AR only)  
Grand Manor® (AR only)  
Highland Slate® (AR only)  
Highland Slate® IR (AR only)  
Landmark Solaris® AR  
Landmark Solaris® Gold (AR only)  
Landmark Solaris® Gold IR (AR only)  
Landmark Solaris® Platinum (AR only)  
Landmark® AR  
Landmark® IR (AR only)  
Landmark® Premium AR  
Landmark® Pro AR  
Landmark® TL AR  
Patriot AR  
Presidential Shake® AR  
Presidential Shake® IR (AR only)  
Presidential Shake® TL AR  
Presidential Solaris® Gold (AR only)  
Shadow Ridge® AR  
Shangle Ridge® (AR only)  
Solaris® Accessory (AR only)  
Solaris® Accessory IR (AR only)  
Solaris® Hip & Ridge Accessory (AR only)  
XT™ 25 (AR only)  
XT™ 30 IR (AR only)

· **Recommended use and restriction on use**

· **Recommended use:** Algae Resistant Asphalt Roofing Shingles  
· **Restrictions on use:** See Sections 8 and 10 for further information.

· **Details of the supplier of the Safety Data Sheet**

· **Manufacturer/Supplier:**

CertainTeed Corporation  
20 Moores Road  
Malvern, PA 19355  
610-893-6000

· **Emergency telephone number:**

CHEMTREC  
1-800-424-9300 (US/Canada)  
+01 703-527-3887 (International)

**2 Hazard(s) identification**

(Cont'd. on page 2)

# Safety Data Sheet

Acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: February 27, 2018

Revision: February 27, 2018

**Trade name: Algae Resistant Shingles / Hip & Ridge / Starter Shingles**

(Cont'd. of page 1)

· **Classification of the substance or mixture**

The product is not classified as hazardous according to the Globally Harmonized System (GHS).

· **Label elements**

- **GHS label elements** Not regulated.
- **Hazard pictograms:** Not regulated.
- **Signal word:** Not regulated.
- **Hazard statements:** Not regulated.
- **Precautionary statements:** Not regulated.

- **Other hazards** There are no other hazards not otherwise classified that have been identified.

### 3 Composition/information on ingredients

· **Chemical characterization: Mixtures**

· **Components:**

8052-42-4	Asphalt	☠ Carc. 2, H351	10-20%
14808-60-7	Quartz (SiO <sub>2</sub> )	☠ Carc. 1A, H350	10-20%
14807-96-6	Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )		2.5-5%
1332-58-7	Kaolin		1-2.5%
13463-67-7	titanium dioxide	☠ Carc. 2, H351	0.1-1%
1309-37-1	diiron trioxide / iron (III) oxide		0.1-1%
1332-37-2	Iron oxide		0.1-1%

· **Additional information:**

Non-classification as a carcinogen is based on non-respirable form of product.  
 For the listed ingredient(s), the identity and/or exact percentage(s) are being withheld as a trade secret.  
 For the wording of the listed Hazard Statements, refer to section 16.

### 4 First-aid measures

· **Description of first aid measures**

· **After inhalation:**

Respiration of particulates is unlikely during normal usage.  
 Supply fresh air; consult doctor in case of complaints.

· **After skin contact:**

Brush off loose particles from skin.  
 Wash with soap and water.  
 If skin irritation is experienced, consult a doctor.

· **After eye contact:**

Remove contact lenses if worn, if possible.  
 Rinse opened eye for several minutes under running water. If symptoms persist, consult a doctor.

· **After swallowing:**

Rinse out mouth and then drink plenty of water.  
 Do not induce vomiting; immediately call for medical help.

· **Most important symptoms and effects, both acute and delayed:**

Slight irritant effect on eyes.

(Cont'd. on page 3)



# Safety Data Sheet

Acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: February 27, 2018

Revision: February 27, 2018

**Trade name: Algae Resistant Shingles / Hip & Ridge / Starter Shingles**

(Cont'd. of page 2)

Nausea in case of ingestion.  
Gastric or intestinal disorders when ingested.

- **Danger:**

Adverse health effects are not reasonably expected from normal use of product. Hazards listed below may occur from handling of old or improperly stored materials.

May cause cancer by inhalation.

- **Indication of any immediate medical attention and special treatment needed:**

No relevant information available.

## 5 Fire-fighting measures

- **Extinguishing media**

- **Suitable extinguishing agents:**

The product is not flammable.

Use fire fighting measures that suit the environment.

- **For safety reasons unsuitable extinguishing agents:** None.

- **Special hazards arising from the substance or mixture**

Formation of toxic gases is possible during heating or in case of fire.

- **Advice for firefighters**

- **Protective equipment:**

Wear self-contained respiratory protective device.

Wear fully protective suit.

## 6 Accidental release measures

- **Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

Avoid formation of dust.

Do not breathe dust.

- **Environmental precautions** Avoid release to the environment.

- **Methods and material for containment and cleaning up**

Pick up mechanically.

Send for recovery or disposal in suitable receptacles.

- **Reference to other sections**

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

## 7 Handling and storage

- **Handling**

- **Precautions for safe handling:**

Use only in well ventilated areas.

Prevent formation of dust.

Any deposit of dust which cannot be avoided must be regularly removed.

- **Information about protection against explosions and fires:**

Keep respiratory protective device available.

(Cont'd. on page 4)

# Safety Data Sheet

Acc. to OSHA HCS (29 CFR 1910.1200)

Printing date: February 27, 2018

Revision: February 27, 2018

**Trade name: Algae Resistant Shingles / Hip & Ridge / Starter Shingles**

(Cont'd. of page 3)

- **Conditions for safe storage, including any incompatibilities**
- **Requirements to be met by storerooms and receptacles:**  
Avoid storage near extreme heat, ignition sources or open flame.
- **Information about storage in one common storage facility:** Store away from foodstuffs.
- **Specific end use(s)** No relevant information available.

## 8 Exposure controls/personal protection

### · Control parameters

#### · Components with limit values that require monitoring at the workplace:

##### 8052-42-4 Asphalt

REL (USA)	Ceiling limit value: 5* mg/m <sup>3</sup> *15-min; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.5* mg/m <sup>3</sup> *inh. fraction; as benzene-soluble aerosol; BEIp
EL (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> inhalable, IARC 2B
EV (Canada)	Long-term value: 0.5 mg/m <sup>3</sup> fume, as benzene-soluble aerosol, inhalable
LMPE (Mexico)	Long-term value: 0.5* mg/m <sup>3</sup> A4, IBEp;*fracción inhalable

##### 14808-60-7 Quartz (SiO<sub>2</sub>)

REL (USA)	see Quartz listing
REL (USA)	Long-term value: 0.05* mg/m <sup>3</sup> *respirable dust; See Pocket Guide App. A
TLV (USA)	Long-term value: 0.025* mg/m <sup>3</sup> *as respirable fraction
EL (Canada)	Long-term value: 0.025 mg/m <sup>3</sup> ACGIH A2; IARC 1
EV (Canada)	Long-term value: 0.10* mg/m <sup>3</sup> *respirable fraction
LMPE (Mexico)	Long-term value: 0.025* mg/m <sup>3</sup> A2, *fracción respirable

##### 14807-96-6 Talc (Mg<sub>3</sub>H<sub>2</sub>(SiO<sub>3</sub>)<sub>4</sub>)

REL (USA)	Long-term value: 20 mppcf ppm (containing <1% Quartz)
REL (USA)	Long-term value: 2* mg/m <sup>3</sup> *respirable dust; and <1% Quartz
TLV (USA)	Long-term value: 2* mg/m <sup>3</sup> *as respirable fraction; E
EL (Canada)	Long-term value: 2 *0.1 f/cc mg/m <sup>3</sup> resp. *if contains asbestos : ACGIH A1, IARC 1
EV (Canada)	Long-term value: 2* mg/m <sup>3</sup> , 2 f/cc ppm *respirable

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LMPE (Mexico) Long-term value: 2\* mg/m<sup>3</sup>  
A4, \*fracción respirable

**1332-58-7 Kaolin**

PEL (USA) Long-term value: 15\* 5\*\* mg/m<sup>3</sup>  
\*total dust \*\*respirable fraction

REL (USA) Long-term value: 10\* 5\*\* mg/m<sup>3</sup>  
\*total dust \*\*respirable fraction

TLV (USA) Long-term value: 2\* mg/m<sup>3</sup>  
E; as respirable fraction

EL (Canada) Long-term value: 2 mg/m<sup>3</sup>

EV (Canada) Long-term value: 2(D) mg/m<sup>3</sup>  
respirable

LMPE (Mexico) Long-term value: 2\* mg/m<sup>3</sup>  
A4, \*fracción respirable

**13463-67-7 titanium dioxide**

PEL (USA) Long-term value: 15\* mg/m<sup>3</sup>  
\*total dust

REL (USA) See Pocket Guide App. A

TLV (USA) Long-term value: 10 mg/m<sup>3</sup>  
withdrawn from NIC

EL (Canada) Long-term value: 10\* 3\*\* mg/m<sup>3</sup>  
\*total dust; \*\*respirable fraction; IARC 2B

EV (Canada) Long-term value: 10 mg/m<sup>3</sup>  
total dust

LMPE (Mexico) Long-term value: 10 mg/m<sup>3</sup>  
A4

**1309-37-1 diiron trioxide / iron (III) oxide**

PEL (USA) Long-term value: 10\* 15\*\* 5\*\*\* mg/m<sup>3</sup>  
\*Fume; Rouge: \*\*Total dust, \*\*\*respirable

REL (USA) Long-term value: 5 mg/m<sup>3</sup>  
Dust & fume, as Fe

TLV (USA) Long-term value: 5\* mg/m<sup>3</sup>  
\*as respirable fraction

EL (Canada) Short-term value: 10\*\* mg/m<sup>3</sup>  
Long-term value: 5\* 10\*\*\* 3\*\*\*\* mg/m<sup>3</sup>  
\*dust & fume \*\*fume; Rouge: \*\*\*total dust\*\*\*\*resp.

EV (Canada) Long-term value: 5\* 10\*\* mg/m<sup>3</sup>  
\*respirable, including Rouge; \*\*total dust

LMPE (Mexico) Long-term value: 5\* mg/m<sup>3</sup>  
A4, \*fracción respirable

**1332-37-2 Iron oxide**

REL (USA) Long-term value: 1 mg/m<sup>3</sup>  
as Fe

TLV (USA) Long-term value: 1 mg/m<sup>3</sup>  
as Fe

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LMPE (Mexico)	Long-term value: 1 mg/m <sup>3</sup> como Fe
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· **Ingredients with biological limit values:**

**8052-42-4 Asphalt**

BEI (USA)	- Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative)
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· **Exposure controls**

· **General protective and hygienic measures:**

The usual precautionary measures for handling chemicals should be followed.  
Keep away from foodstuffs, beverages and feed.  
Immediately remove all soiled and contaminated clothing.  
Store protective clothing separately.

· **Engineering controls:** No relevant information available.

· **Breathing equipment:**

Not required under normal conditions of use.  
Use respiratory protection when grinding or cutting material.  
For large spills, respiratory protection may be advisable.  
Particulate mask should filter at least 99% of airborne particles.

· **Protection of hands:**

Wear gloves for the protection against mechanical hazards according to OSHA and NIOSH rules.

· **Eye protection:** Follow OSHA or EU guidelines concerning the use of protective eyewear.

· **Body protection:** Wear protective clothing to protect against mechanical hazards.

· **Limitation and supervision of exposure into the environment**

Avoid release to the environment.

· **Risk management measures** See Section 7 for additional information.

## 9 Physical and chemical properties

· **Information on basic physical and chemical properties**

· **Appearance:**

Form: Flexible shingle with granular surface

Color: Dark

· **Odor:** Light petroleum

· **Odor threshold:** Not determined.

· **pH-value:** Not applicable.

· **Melting point/Melting range:** Not determined.

· **Boiling point/Boiling range:** Not determined.

· **Flash point:** 460 °C (860 °F)

· **Flammability (solid, gaseous):** Not determined.

· **Auto-ignition temperature:** Not determined.

· **Decomposition temperature:** Not determined.

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· <b>Danger of explosion:</b>	Product does not present an explosion hazard.
· <b>Explosion limits</b>	
<b>Lower:</b>	Not determined.
<b>Upper:</b>	Not determined.
· <b>Oxidizing properties:</b>	Not determined.
· <b>Vapor pressure:</b>	Not determined.
· <b>Density:</b>	Not determined.
· <b>Relative density:</b>	Not determined.
· <b>Vapor density:</b>	Not applicable.
· <b>Evaporation rate:</b>	Not applicable.
· <b>Solubility in / Miscibility with Water:</b>	Insoluble.
· <b>Partition coefficient (n-octanol/water):</b>	Not determined.
· <b>Viscosity</b>	
<b>Dynamic:</b>	Not applicable.
<b>Kinematic:</b>	Not applicable.
· <b>Other information</b>	No relevant information available.

## 10 Stability and reactivity

- **Reactivity:** No relevant information available.
- **Chemical stability:** Stable under normal temperatures and pressures.
- **Thermal decomposition / conditions to be avoided:**  
No decomposition if used and stored according to specifications.
- **Possibility of hazardous reactions**  
Reacts with strong oxidizing agents.  
Reacts with strong acids.
- **Conditions to avoid** Avoid acids.
- **Incompatible materials**  
Strong acids  
Oxidizing agents
- **Hazardous decomposition products** Carbon monoxide and carbon dioxide

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:** Based on available data, the classification criteria are not met.
- **LD/LC50 values that are relevant for classification:** None.
- **Primary irritant effect:**
- **On the skin:** Based on available data, the classification criteria are not met.
- **On the eye:** Based on available data, the classification criteria are not met.
- **Sensitization:** Based on available data, the classification criteria are not met.

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· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer):**

8052-42-4	Asphalt	2B
14808-60-7	Quartz (SiO <sub>2</sub> )	1
13463-67-7	titanium dioxide	2B

· **NTP (National Toxicology Program):**

14808-60-7	Quartz (SiO <sub>2</sub> )	K
8007-18-9	C.I. Pigment Yellow 53	K

· **OSHA-Ca (Occupational Safety & Health Administration):**

None of the ingredients are listed.

· **Probable route(s) of exposure:**

Ingestion.  
Eye contact.  
Skin contact.

· **Acute effects (acute toxicity, irritation and corrosivity):** From product as supplied: None.

· **Repeated dose toxicity:**

Repeated or long-term inhalation of product dusts may cause pulmonary disease.

· **Germ cell mutagenicity:** Based on available data, the classification criteria are not met.

· **Carcinogenicity:**

Contains known or suspect carcinogens when inhaled. Product is in non-inhalable form and is nonclassifiable as a carcinogen.

· **Reproductive toxicity:** Based on available data, the classification criteria are not met.

· **STOT-single exposure:** Based on available data, the classification criteria are not met.

· **STOT-repeated exposure:** Based on available data, the classification criteria are not met.

· **Aspiration hazard:** Based on available data, the classification criteria are not met.

## 12 Ecological information

· **Toxicity**

· **Aquatic toxicity** No relevant information available.

· **Persistence and degradability** No relevant information available.

· **Bioaccumulative potential:** No relevant information available.

· **Mobility in soil:** No relevant information available.

· **Additional ecological information**

· **General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Other adverse effects** No relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Smaller quantities can be disposed of with household waste.

The user of this material has the responsibility to dispose of unused material, residues and containers in

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compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

- **Uncleaned packagings**
- **Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

- |  |                 |
|--|-----------------|
| <ul style="list-style-type: none"> <li>· <b>UN-Number</b></li> <li>· DOT, ADR, IMDG, IATA</li> </ul>                                   | Not regulated.  |
| <ul style="list-style-type: none"> <li>· <b>UN proper shipping name</b></li> <li>· DOT, ADR, IMDG, IATA</li> </ul>                     | Not regulated.  |
| <ul style="list-style-type: none"> <li>· <b>Transport hazard class(es)</b></li> <li>· DOT, ADR, IMDG, IATA</li> <li>· Class</li> </ul> | Not regulated.  |
| <ul style="list-style-type: none"> <li>· <b>Packing group</b></li> <li>· DOT, ADR, IMDG, IATA</li> </ul>                               | Not regulated.  |
| <ul style="list-style-type: none"> <li>· <b>Environmental hazards</b></li> <li>· Marine pollutant:</li> </ul>                          | No              |
| <ul style="list-style-type: none"> <li>· <b>Special precautions for user</b></li> </ul>  | Not applicable. |
| <ul style="list-style-type: none"> <li>· <b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b></li> </ul>     | Not applicable. |

### 15 Regulatory information

- **Safety, health and environmental regulations/legislation specific for the substance or mixture**
- **United States (USA)**
- **SARA**

· **Section 302 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

· **Section 313 (Specific toxic chemical listings):**

None of the ingredients are listed.

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65 (California)**

· **Chemicals known to cause cancer:**

8052-42-4	Asphalt
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14808-60-7	Quartz (SiO <sub>2</sub> )
14807-96-6	Talc (Mg <sub>3</sub> H <sub>2</sub> (SiO <sub>3</sub> ) <sub>4</sub> )
13463-67-7	titanium dioxide
8007-18-9	C.I. Pigment Yellow 53

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

· **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

· **EPA (Environmental Protection Agency):**

None of the ingredients are listed.

· **IARC (International Agency for Research on Cancer):**

8052-42-4	Asphalt	2B
14808-60-7	Quartz (SiO <sub>2</sub> )	1
13463-67-7	titanium dioxide	2B

· **NIOSH-Ca (National Institute for Occupational Safety and Health):**

8052-42-4	Asphalt
14808-60-7	Quartz (SiO <sub>2</sub> )
13463-67-7	titanium dioxide
8007-18-9	C.I. Pigment Yellow 53

## 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Date of preparation / last revision** February 27, 2018 / -

· **Abbreviations and acronyms:**

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road  
 IMDG: International Maritime Code for Dangerous Goods  
 DOT: US Department of Transportation  
 IATA: International Air Transport Association  
 CAS: Chemical Abstracts Service (division of the American Chemical Society)  
 LC50: Lethal concentration, 50 percent  
 LD50: Lethal dose, 50 percent  
 NIOSH: National Institute for Occupational Safety and Health  
 OSHA: Occupational Safety & Health Administration  
 TLV: Threshold Limit Value  
 PEL: Permissible Exposure Limit  
 REL: Recommended Exposure Limit  
 BEI: Biological Exposure Limit  
 Carc. 1A: Carcinogenicity – Category 1A  
 Carc. 2: Carcinogenicity – Category 2

· **Sources**

Website, European Chemicals Agency ([echa.europa.eu](http://echa.europa.eu))

Website, US EPA Substance Registry Services ([ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do](http://ofmpub.epa.gov/sorinternet/registry/substreg/home/overview/home.do))

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Website, Chemical Abstracts Registry, American Chemical Society ([www.cas.org](http://www.cas.org))

Patty's Industrial Hygiene, 6th ed., Rose, Vernon, ed. ISBN: 978-0-470-07488-6

Casarett and Doull's Toxicology: The Basic Science of Poisons, 8th Ed., Klaasen, Curtis D., ed., ISBN: 978-0-07-176923-5.

Safety Data Sheets, Individual Manufacturers

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# SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Type:** Malarkey NEX™ SBS Polymer Modified Asphalt Fiberglass Shingles

**Trade Names/SKU Numbers:**

251 Vista™ laminate shingles

252 Vista™ AR laminate shingles

261 Vista™ laminate shingles

262 Vista™ AR laminate shingles

**Use:** Steep slope roofing shingles

**Manufacturer:**

Malarkey Roofing Products®

P.O. Box 17217

3131 N. Columbia Blvd.

Portland, OR 97217

Phone: 503-283-1191

www.malarkeyroofing.com

**Emergency Contact:**

CHEMTREC®: 1-800-424-9300 (24 HOUR)

## 2 HAZARD(S) IDENTIFICATION

**Signal Word:** WARNING

**Carcinogenicity:** Category 2A

**Skin Irritation:** Category 2

**HAZARD STATEMENTS**

- Causes skin and eye irritation.
- May cause an allergic skin reaction.
- Causes damage to organs through prolonged or repeated exposure.

**PRECAUTIONARY STATEMENTS**

- Read instructions before use.
- Use in a well-ventilated area.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust.
- Wear proper *Personal Protective Equipment* including gloves/protective clothing/eye protection/face protection, and respirator where appropriate.
- Do not eat, drink or smoke when using this product.
- Thoroughly wash hands and exposed skin after handling.

**GHS CLASSIFICATION**



### 3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS #	Ingredient %
Asphalt	8052-42-4	15 - 30
Limestone	1317-65-3	30 - 40
Fiberglass Mat		
Fiberglass	65997-17-3	0 - 5
Urea Formaldehyde Binder	9011-05-6	0 - 0.003
Formaldehyde (gas)	50-00-0	< 0.04
SBS	9003-55-6	3 - 12
Carbon Black	133-86-4	< 2%
Naphthenic Oil	64742-04-7	< 2%
Zinc dust	1314-12-2	trace
Backing Sand, Crystalline Silica	14808-60-7	0 - 6
Mineral Granules	Mixture	25 - 35

### 4 FIRST-AID MEASURES

**Eye contact:** Immediately flush eyes with plenty of cool water for at least 20 minutes, occasionally lifting the eye lids to ensure thorough rinsing. Get medical attention if irritation persists.

**Skin contact:** Clean any exposed skin with warm soapy water if possible. If not, and a waterless hand cleaner is used, it should be without pumice. Do not use solvents or thinners to remove material from skin. Get medical attention if irritation persists or develops.

**Ingestion:** If swallowed, do not induce vomiting. If vomiting occurs, keep head lower than hips to avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis. Call poison control center or get immediate medical attention.

**Inhalation:** If inhalation of dust occurs, remove person to fresh air. Drink water to clear throat or blow nose to clear. If not breathing, give artificial respiration or give oxygen by trained personnel and get immediate medical attention.

**Notes to physician:** Treatment should be based on removing the source of irritation with treatment of symptoms as necessary.

### 5 FIRE-FIGHTING MEASURES

**Flash point:** 525°F minimum (274°C), Cleveland Open Cup

**Auto-ignition temperature:** >650°F

**Extinguishing media:** Dry chemical, CO<sub>2</sub>, or foam fire extinguisher should be used for controlling small fires. Avoid use of straight-stream water.

**Special firefighting procedures:** Avoid breathing fumes. Firefighters should wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

**Unusual fire or explosion hazards:** When heated, fumes may burn if ignition source is provided.

Petroleum asphalt fumes can explode if emitted in an enclosed environment and supplied with an ignition source. Burning product will cause thick black smoke.

**Hazardous combustion products:** Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.

## 6 ACCIDENTAL RELEASE MEASURES

**Precautions if material is spilled or released:** Pick up large pieces. Leather or cotton gloves must be worn when handling. Do not dry sweep dusts or blow with compressed air. Wet sweep only.

**Waste disposal methods:** It is highly recommended that this product be recycled. Otherwise, dispose in accordance with applicable Federal, State, and Local regulations. Do not burn.

## 7 HANDLING AND STORAGE

**Storage temperature:** Store away from heat and all ignition sources and open flames in accordance with applicable laws and regulations. Product should not be burned or heated using a direct flame.

**Precautions to be taken in handling and storage:** Follow recommended work practices and use recommended personal protective clothing and equipment.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	CAS #	OSHA		ACGIH	
		TWA	STEL	TWA	STEL
Asphalt	8052-42-4	NE	NE	0.5 mg/m <sup>3a</sup>	NE
Limestone	1317-65-3	15 / 5 <sup>b</sup>	NE	10 / 3 <sup>b</sup>	NE
Fiberglass	65997-17-3	15 / 5 <sup>b</sup>	NE	5 <sup>b</sup>	NE
Urea Formaldehyde Binder	9011-05-6	NE	NE	NE	NE
Formaldehyde (gas)	50-00-0	0.75 ppm	2 ppm	NE	0.3 ppm
Styrene Butadiene Copolymer	9003-55-6	NE	NE	NE	NE
Carbon Black	133-86-4	3.5 mg/m <sup>3</sup>	NE	NE	NE
Naphthenic Oil	64742-04-7	NE	NE	5 mg/m <sup>3</sup>	NE
Zinc dust	1314-12-2	10 mg/m <sup>3b</sup>	NE	10 mg/m <sup>3b</sup>	5 mg/m <sup>3</sup>
Backing Sand, Crystalline Silica	14808-60-7	0.025 mg/m <sup>3c</sup>	NE	0.025 mg/m <sup>3c</sup>	NE

NE = Not Established

<sup>a</sup> = Asphalt Fume as benzene-soluble inhalable aerosol

<sup>b</sup> = Total Nuisance Dust / Respirable Dust (mg/m<sup>3</sup>)

<sup>c</sup> = Crystalline Silica TWAs for respirable fraction

**Respiratory protection:** Normally not needed in well-ventilated areas unless cutting with power tools. If applicable exposure standards are exceeded or can be exceeded introduce ventilation to remove dust. If increased ventilation is not possible, use a NIOSH approved air-purifying respirator. If concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a

positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator/SCBA use, fitting, and training standards and regulations.

**Ventilation:** Use only with adequate ventilation to maintain exposures below applicable exposure limits.

**Eye protection:** Safety glasses with side shields must be used when handling.

**Skin protection:** Must wear leather or cotton gloves during application and tear-off activities.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and odor:** Solid material with granular surfacing, sand backing, very low odor.

**Odor threshold:** Not Applicable

**Vapor pressure:** Not Applicable

**pH:** Not Applicable

**Specific gravity/relative density:** >2

**Vapor density (Air = 1):** Not Applicable

**Viscosity:** Not Applicable; solid

**Boiling point:** >700°F

**Melting point:** >200°F

**Solubility (IES):** No data available

**Flash point:** >525°F

**Evaporation rate (Butyl Acetate = 1) :** <0.1

**Flammability (Solid and Gas):** Not Applicable

**Initial boiling point and boiling range:** Not Applicable

**Auto-ignition temperature:** >343°C/680°F

**Upper/lower flammability or explosive limits:** Not Applicable

**Decomposition temperature:** Not Applicable

## 10 STABILITY AND REACTIVITY

**Stability:** Stable

**Reactivity:** Reactivity will not occur.

**Conditions to avoid:** Keep from heat, sparks, open flame and other sources of ignition. Avoid contact with strong oxidizing agents. PRODUCT SHOULD NOT BE BURNED OR HEATED USING A DIRECT FLAME DEVICE.

**Hazardous reaction:** Polymerization will not occur.

**Incompatibility (materials to avoid):** Strong acids or bases, oxidizing agents and selected amines.

**Hazardous combustion products:** Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.

## 11 TOXICOLOGICAL INFORMATION

**Eye:** May cause eye irritation.

**Skin:** May cause skin irritation.

**Inhalation:** Dust may cause upper respiratory irritation.

**Ingestion:** May cause harmful effects if swallowed.

### THE FOLLOWING COMPONENT DATA IS PROVIDED FOR USER INFORMATION:

#### SILICA

**Cancer:** This product contains crystalline silica (quartz). IARC has determined that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1). IARC concluded that there was sufficient evidence in humans and animals for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational sources. The NTP has classified silica as known to be a human carcinogen. The physical nature of this product may help limit any inhalation hazard from

crystalline silica during application and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on this product may liberate crystalline silica dust.

**Acute effects:** Exposure to silica dust can cause irritation of the eyes, nose and throat. Exposure to high concentrations can also cause Accelerated Silicosis causing progressive shortness of breath, fever, coughing, and weight loss.

**Chronic effects:** In addition to cancer, breathing of silica over a period of time can cause damage to the lung tissue and silicosis after long exposure at low concentrations causing shortness of breath, fever, coughing, and weight loss. Prolonged and repeated exposure to respirable silica-containing dust may also cause autoimmune disease, kidney disease, tuberculosis, nonmalignant respiratory disease, and bronchitis.

## FORMALDEHYDE

**Cancer:** This product may contain extremely low levels of formaldehyde that are not expected to cause a health hazard under normal conditions of use. IARC and NTP have classified formaldehyde as a human carcinogen based on sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, limited evidence for cancer of the nasal cavity and paranasal sinuses, and "strong but not sufficient evidence" for leukemia. The finding for leukemia reflects the epidemiologists' finding of strong evidence in human studies coupled with an inability to identify a mechanism for induction of leukemia. The physical nature of this product may help limit any inhalation hazard from formaldehyde during application and in its hardened state.

**Acute effects:** The major acute toxic effects caused by formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Ingestion exposure to formaldehyde in humans has resulted in corrosion of the gastrointestinal tract and inflammation and ulceration of the mouth, esophagus, and stomach.

**Chronic effects:** In addition to cancer, exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and eye, nose, and throat irritation. Repeated contact with liquid solutions of formaldehyde has resulted in skin irritation and allergic contact dermatitis in humans.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects (GHG, Ozone):** No data available.

## 13 DISPOSAL CONSIDERATIONS

This product has not been regulated as a hazardous waste by the USEPA. Recycling is recommended. Otherwise, dispose in accordance with Federal, State, and Local regulations. Do not burn. Do not dispose as sewage.

## 14 TRANSPORT INFORMATION

This product is not regulated as a hazardous material for transport under 49 CFR or for vessel transport under the IMDG Code.

**UN number:** Not applicable

**UN proper shipping name:** Not applicable

**Packing group, if applicable:** Not applicable

**Environmental hazards:** Not applicable

**Transport in bulk:** Not applicable

**Special precautions:** Not applicable

## 15 REGULATORY INFORMATION


**Toxic Substances Control Act (TSCA):** Some components in this product are listed on the TSCA Inventory.

**Comprehensive Environmental Response Compensation and Liability (CERCLA):** None

**Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III, Section 302 Extremely Hazardous Substances:** None

**Section 311/312 Hazard Categories:** Immediate Health; Delayed Health; Fire Hazard

**Section 313 Reportable Ingredients:** This material contains formaldehyde (CAS# 50-00-0), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**California Proposition 65:**  **WARNING:** This product can expose you to chemicals, including bitumen, which is known to the State of California to cause cancer. For more information go to: [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## 16 OTHER INFORMATION

### HMIS RATING

<b>HEALTH: 1</b>
<b>FLAMMABILITY: 1</b>
<b>REACTIVITY: 0</b>
<b>PERSONAL PROTECTION: B</b>



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# SAFETY DATA SHEET

## 1 PRODUCT AND COMPANY IDENTIFICATION

**Product Type:** Malarkey® Polymer Modified Asphalt/Fiberglass Underlayment

**Trade Names:**  
Right Start™ UDL

**Use:** Steep slope underlayment

**Manufacturer:**  
Malarkey Roofing Products  
P.O. Box 17217  
3131 N. Columbia Blvd.  
Portland, OR, 97217  
Phone: 503-283-1191  
www.malarkeyroofing.com

**Emergency Contact:**  
CHEMTREC®: 1-800-424-9300 (24 HOUR)

## 2 HAZARD(S) IDENTIFICATION

**Signal Word:** WARNING

**Carcinogenicity:** Category 2A

**Skin Irritation:** Category 2

### HAZARD STATEMENTS

- Causes skin and eye irritation.
- May cause an allergic skin reaction.
- Causes damage to organs through prolonged or repeated exposure.

### PRECAUTIONARY STATEMENTS

- Read instructions before use.
- Use in a well-ventilated area.
- Do not handle until all safety precautions have been read and understood.
- Do not breathe dust.
- Wear proper Personal Protective Equipment including gloves/protective clothing/eye protection/face protection and respirator where appropriate.
- Do not eat, drink or smoke when using this product.
- Thoroughly wash hands and exposed skin after handling.

### GHS CLASSIFICATION





### 3 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredients	CAS #	Ingredient %
Asphalt	8052-42-2	30 - 40
Limestone	1317-65-3	30 - 40
Fiberglass Mat		
Fiberglass	65997-17-3	0 - 5
Urea Formaldehyde Binder	9011-05-6	0 - 0.003
SBS	9003-55-6	2 - 8
Backing Sand	14808-60-7	15 - 25

### 4 FIRST-AID MEASURES

**Eye contact:** Immediately flush eyes with plenty of cool water for at least 20 minutes, occasionally lifting the eye lids to ensure thorough rinsing. Get medical attention if irritation persists.

**Skin contact:** Clean any exposed skin with warm soapy water if possible. If not, and a waterless hand cleaner is used, it should be without pumice. Do not use solvents or thinners to remove material from skin. Get medical attention if irritation persists or develops.

**Ingestion:** If swallowed, do not induce vomiting. If vomiting occurs, keep head lower than hips to avoid aspiration of vomit into the lungs which can cause inflammation or pneumonitis. Call poison control center or get immediate medical attention.

**Inhalation:** If inhalation of dust occurs, remove person to fresh air. Drink water to clear throat or blow nose to clear. If not breathing, give artificial respiration or give oxygen by trained personnel and get immediate medical attention.

**Notes to physician:** Treatment should be based on removing the source of irritation with treatment of symptoms as necessary.

### 5 FIRE-FIGHTING MEASURES

**Flash point:** 525°F minimum (274°C), Cleveland Open Cup

**Auto-ignition temperature:** >650°F

**Extinguishing media:** Dry chemical, CO<sub>2</sub>, or foam fire extinguisher should be used for controlling small fires. Avoid use of straight-stream water.

**Special firefighting procedures:** Avoid breathing fumes. Firefighters should wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

**Unusual fire or explosion hazards:** When heated, fumes may burn if ignition source is provided. Petroleum asphalt fumes can explode if emitted in an enclosed environment and supplied with an ignition source. Burning product will cause thick black smoke.

**Hazardous combustion products:** Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.

## 6 ACCIDENTAL RELEASE MEASURES

**Precautions if material is spilled or released:** Pick up large pieces. Leather or cotton gloves must be worn when handling. Do not dry sweep dusts or blow with compressed air. Wet sweep only.

**Waste disposal methods:** It is highly recommended that this product be recycled. Otherwise, dispose in accordance with applicable Federal, State, and Local regulations. Do not burn.

## 7 HANDLING AND STORAGE

**Storage temperature:** Store away from heat and all ignition sources and open flames in accordance with applicable laws and regulations. Product should not be burned or heated using a direct flame.

**Precautions to be taken in handling and storage:** Follow recommended work practices and use recommended personal protective clothing and equipment.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Components	CAS #	OSHA		ACGIH	
		TWA	STEL	TWA	STEL
Asphalt	8052-42-2	NE	NE	0.5 mg/m <sup>3</sup> <sup>a</sup>	NE
Limestone	1317-65-3	15 / 5 <sup>b</sup>	NE	10 / 3 <sup>b</sup>	NE
Fiberglass	65997-17-3	15 / 5 <sup>b</sup>	NE	5 <sup>b</sup>	NE
Urea Formaldehyde Binder	9011-05-6	0.75	2	NE	0.3
SBS	9003-55-6	15 / 5 <sup>b</sup>			
Backing Sand	14808-60-7	(10/%SiO <sub>2</sub> ) +2	NE	0.025	NE

NE = Not Established

<sup>a</sup> = Asphalt Fume as benzene-soluble inhalable aerosol

<sup>b</sup> = Total Nuisance Dust / Respirable Dust

**Respiratory protection:** Normally not needed in well-ventilated areas unless cutting with power tools. If applicable exposure standards are exceeded or can be exceeded introduce ventilation to remove dust. If increased ventilation is not possible, use a NIOSH approved air-purifying respirator. If concentrations are sufficiently high that this respirator is inadequate, or high enough to cause oxygen deficiency, use a positive pressure self-contained breathing apparatus (SCBA). Follow all applicable respirator/SCBA use, fitting, and training standards and regulations.

**Ventilation:** Use only with adequate ventilation to maintain exposures below applicable exposure limits.

**Eye protection:** Safety glasses with side shields must be used when handling.

**Skin protection:** Must wear leather or cotton gloves during application and tear off activities.

## 9 PHYSICAL AND CHEMICAL PROPERTIES

**Appearance and odor:** Solid material with granular surfacing, sand backing, very low odor.

**Odor threshold:** Not Applicable

**Vapor pressure:** Not Applicable

**pH:** Not Applicable

**Specific gravity/relative density:** >2

**Vapor density (Air = 1):** Not Applicable

**Viscosity:** Not Applicable; solid

**Boiling point:** >700°F  
**Melting point:** >200°F  
**Solubility (IES):** No data available  
**Flash point:** >525°F  
**Evaporation rate (Butyl Acetate = 1) :** <0.1  
**Flammability (Solid and Gas):** Not Applicable

**Initial boiling point and boiling range:** Not Applicable  
**Auto-ignition temperature:** >343°C/680°F  
**Upper/lower flammability or explosive limits:** Not Applicable  
**Decomposition temperature:** Not Applicable

## 10 STABILITY AND REACTIVITY

**Stability:** Stable

**Reactivity:** Reactivity will not occur.

**Conditions to avoid:** Keep from heat, sparks, open flame and other sources of ignition. Avoid contact with strong oxidizing agents. PRODUCT SHOULD NOT BE BURNED OR HEATED USING A DIRECT FLAME DEVICE.

**Hazardous reaction:** Polymerization will not occur.

**Incompatibility (materials to avoid):** Strong acids or bases, oxidizing agents and selected amines.

**Hazardous combustion products:** Carbon monoxide, carbon dioxide, ozone, hydrogen sulfide, oxides of sulfur and various hydrocarbons during heating or burning. These combustion products are not expected unless product is heated or burned.

## 11 TOXICOLOGICAL INFORMATION

**Eye:** May cause eye irritation.

**Skin:** May cause skin irritation.

**Inhalation:** Dust may cause upper respiratory irritation.

**Ingestion:** May cause harmful effects if swallowed.

### THE FOLLOWING COMPONENT DATA IS PROVIDED FOR USER INFORMATION:

#### SILICA

**Cancer:** This product contains crystalline silica (quartz). IARC has determined that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1). IARC concluded that there was sufficient evidence in humans and animals for the carcinogenicity of inhaled crystalline silica in the form of quartz from occupational sources. The NTP has classified silica as known to be a human carcinogen. The physical nature of this product may help limit any inhalation hazard from crystalline silica during application and in its hardened state. However, physical forces such as grinding, drilling and other demolition work on this product may liberate crystalline silica dust.

**Acute effects:** Exposure to silica dust can cause irritation of the eyes, nose and throat. Exposure to high concentrations can also cause Accelerated Silicosis causing progressive shortness of breath, fever, coughing, and weight loss.

**Chronic effects:** In addition to cancer, breathing of silica over a period of time can cause damage to the lung tissue and silicosis after long exposure at low concentrations causing shortness of breath, fever, coughing, and weight loss. Prolonged and repeated exposure to respirable silica-containing dust may also cause autoimmune disease, kidney disease, tuberculosis, nonmalignant respiratory disease, and bronchitis.

## FORMALDEHYDE

**Cancer:** This product may contain extremely low levels of formaldehyde that are not expected to cause a health hazard under normal conditions of use. IARC and NTP have classified formaldehyde as a human carcinogen based on sufficient evidence that formaldehyde causes nasopharyngeal cancer in humans, limited evidence for cancer of the nasal cavity and paranasal sinuses, and "strong but not sufficient evidence" for leukemia. The finding for leukemia reflects the epidemiologists' finding of strong evidence in human studies coupled with an inability to identify a mechanism for induction of leukemia. The physical nature of this product may help limit any inhalation hazard from formaldehyde during application and in its hardened state.

**Acute effects:** The major acute toxic effects caused by formaldehyde exposure via inhalation are eye, nose, and throat irritation and effects on the nasal cavity. Other effects seen from exposure to high levels of formaldehyde in humans are coughing, wheezing, chest pains, and bronchitis. Ingestion exposure to formaldehyde in humans has resulted in corrosion of the gastrointestinal tract and inflammation and ulceration of the mouth, esophagus, and stomach.

**Chronic Effects:** In addition to cancer, exposure to formaldehyde by inhalation in humans has been associated with respiratory symptoms and eye, nose, and throat irritation. Repeated contact with liquid solutions of formaldehyde has resulted in skin irritation and allergic contact dermatitis in humans.

## 12 ECOLOGICAL INFORMATION

**Ecotoxicity:** No data available.

**Persistence and degradability:** No data available.

**Bioaccumulative potential:** No data available.

**Mobility in soil:** No data available.

**Other adverse effects (GHG, Ozone):** No data available.

## 13 DISPOSAL CONSIDERATIONS

This product has not been regulated as a hazardous waste by the USEPA. Recycling is recommended. Otherwise, dispose in accordance with Federal, State, and Local regulations. Do not burn. Do not dispose as sewage.

## 14 TRANSPORT INFORMATION

This product is not regulated as a hazardous material for transport under 49 CFR or for vessel transport under the IMDG Code.

**UN number:** Not applicable

**UN proper shipping name:** Not applicable

**Packing group, if applicable:** Not applicable

**Environmental hazards:** Not applicable

**Transport in bulk:** Not applicable

**Special precautions:** Not applicable

## 15 REGULATORY INFORMATION

**Toxic Substances Control Act (TSCA):** Some components in this product are listed on the TSCA Inventory.

**Comprehensive Environmental Response Compensation and Liability (CERCLA):** None  
**Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III, Section 302 Extremely Hazardous Substances:** None

**Section 311/312 Hazard Categories:** Immediate Health; Delayed Health; Fire Hazard

**Section 313 Reportable Ingredients:** This material contains formaldehyde (CAS# 50-00-0), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

**California Proposition 65:** WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

## 16 OTHER INFORMATION

### HMIS RATING

HEALTH: 1
FLAMMABILITY: 1
REACTIVITY: 0
PERSONAL PROTECTION: B



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## SAFETY DATA SHEET

### SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

#### PRODUCT

**Product Name:** MOBIL DELVAC HDEO 15W-40  
**Product Description:** Base Oil and Additives  
**Product Code:** 2015204055J1  
**Intended Use:** Diesel engine oil

#### COMPANY IDENTIFICATION

**Supplier:** EXXON MOBIL CORPORATION  
22777 Springwoods Village Parkway  
Spring, TX 77389 USA

**24 Hour Health Emergency** 609-737-4411  
**Transportation Emergency Phone** 800-424-9300 or 703-527-3887 CHEMTREC  
**Product Technical Information** 800-662-4525  
**MSDS Internet Address** [www.exxon.com](http://www.exxon.com), [www.mobil.com](http://www.mobil.com)

### SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see (M)SDS Section 15).

**Other hazard information:**

**HAZARD NOT OTHERWISE CLASSIFIED (HNOC):** None as defined under 29 CFR 1910.1200.

#### PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

#### HEALTH HAZARDS

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

#### ENVIRONMENTAL HAZARDS

No significant hazards.

<b>NFPA Hazard ID:</b>	Health: 0	Flammability: 1	Reactivity: 0
<b>HMIS Hazard ID:</b>	Health: 0	Flammability: 1	Reactivity: 0

**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.

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<b>SECTION 3</b>	<b>COMPOSITION / INFORMATION ON INGREDIENTS</b>
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This material is defined as a mixture.

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

Name	CAS#	Concentration*	GHS Hazard Codes
ALKYL PHENOL	125643-61-0	1 - < 5%	H413
ORGANO MOLY-SULFUR COMPLEX	Confidential	0.1 - < 1%	H315, H317, H402, H412
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	1 - < 2.5%	H303, H315, H318, H401, H411

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

As per paragraph (i) of 29 CFR 1910.1200, formulation is considered a trade secret and specific chemical identity and exact percentage (concentration) of composition may have been withheld. Specific chemical identity and exact percentage composition will be provided to health professionals, employees, or designated representatives in accordance with applicable provisions of paragraph (i).

<b>SECTION 4</b>	<b>FIRST AID MEASURES</b>
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**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.

**EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**

First aid is normally not required. Seek medical attention if discomfort occurs.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
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**EXTINGUISHING MEDIA**

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water

**FIRE FIGHTING**

**Fire Fighting Instructions:** Evacuate area. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in

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enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulfur oxides

## FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >215°C (419°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** N/D

<b>SECTION 6</b>	<b>ACCIDENTAL RELEASE MEASURES</b>
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## NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

## PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification 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: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor 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. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

## SPILL MANAGEMENT

**Land Spill:** Stop leak if you can do it without risk. Recover by pumping or with suitable absorbent.

**Water Spill:** Stop leak if you can do it without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

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



<b>SECTION 7</b>	<b>HANDLING AND STORAGE</b>
------------------	-----------------------------

**HANDLING**

Avoid contact with used product. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or ground procedures. However, bonding and grounds may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator.

**STORAGE**

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
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**EXPOSURE LIMIT VALUES**

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

Substance Name	Form	Limit / Standard			NOTE	Source
ORGANO MOLY-SULFUR COMPLEX	Inhalable fraction.	TWA	10 mg/m <sup>3</sup>		N/A	ACGIH
ORGANO MOLY-SULFUR COMPLEX	Respirable fraction.	TWA	3 mg/m <sup>3</sup>		N/A	ACGIH

**Exposure limits/standards for materials that can be formed when handling this product:** When mists/aerosols can occur the following are recommended: 5 mg/m<sup>3</sup> - ACGIH TLV (inhalable fraction), 5 mg/m<sup>3</sup> - OSHA PEL.

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

No biological limits allocated.

**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.

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**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:

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

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/vapor 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:

No protection is ordinarily required under normal conditions of use.

**Eye Protection:** If contact is likely, safety glasses with side shields 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 skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

**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 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.

<b>SECTION 9</b>	<b>PHYSICAL AND CHEMICAL PROPERTIES</b>
------------------	---

**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

**Color:** Dark Brown

**Odor:** Characteristic

**Odor Threshold:** N/D

## IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15.6 °C):** 0.875

**Flammability (Solid, Gas):** N/A

**Flash Point [Method]:** >215°C (419°F) [ASTM D-92]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

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**Autoignition Temperature:** N/D  
**Boiling Point / Range:** > 316°C (600°F)  
**Decomposition Temperature:** N/D  
**Vapor Density (Air = 1):** N/D  
**Vapor Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** N/A  
**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5  
**Solubility in Water:** Negligible  
**Viscosity:** 112 cSt (112 mm<sup>2</sup>/sec) at 40 °C | 14.3 cSt (14.3 mm<sup>2</sup>/sec) at 100°C [ASTM D 445]  
**Oxidizing Properties:** See Hazards Identification Section.

#### OTHER INFORMATION

**Freezing Point:** N/D  
**Melting Point:** N/A  
**Pour Point:** -27°C (-17°F)  
**DMSO Extract (mineral oil only), IP-346:** < 3 %wt

<b>SECTION 10</b>	<b>STABILITY AND REACTIVITY</b>
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**REACTIVITY:** See sub-sections below.

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

**CONDITIONS TO AVOID:** Excessive heat. High energy sources of ignition.

**MATERIALS TO AVOID:** Strong oxidizers

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

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

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
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#### INFORMATION ON TOXICOLOGICAL EFFECTS

<b>Hazard Class</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point	May cause mild, short-lasting discomfort to eyes. Based on

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data for material.	assessment of the components.
<b>Sensitization</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for material.	Not expected to cause organ damage from a single exposure.
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

## OTHER INFORMATION

### For the product itself:

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

Diesel engine oils: Not carcinogenic in animals tests. Used and unused diesel engine oils did not produce any carcinogenic effects in chronic mouse skin painting studies.

Oils that are used in gasoline engines may become hazardous and display the following properties: Carcinogenic in animal tests. Caused mutations in vitro. Possible allergen and photoallergen. Contains polycyclic aromatic compounds (PAC) from combustion products of gasoline and/or thermal degradation products.

### Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitizing in test animals.

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

### --REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

## SECTION 12

## ECOLOGICAL INFORMATION

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

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Material -- Not expected to be harmful to aquatic organisms.

#### **MOBILITY**

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

#### **PERSISTENCE AND DEGRADABILITY**

##### **Biodegradation:**

Base oil component -- Expected to be inherently biodegradable

#### **BIOACCUMULATION POTENTIAL**

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

### **SECTION 13**

### **DISPOSAL CONSIDERATIONS**

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**

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

#### **REGULATORY DISPOSAL INFORMATION**

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

**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 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.**

### **SECTION 14**

### **TRANSPORT INFORMATION**

**LAND (DOT):** Not Regulated for Land Transport

**LAND (TDG):** Not Regulated for Land Transport

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

**Marine Pollutant:** No

Product Name: MOBIL DELVAC HDEO 15W-40  
 Revision Date: 18 May 2020  
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**AIR (IATA):** Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
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**OSHA HAZARD COMMUNICATION STANDARD:** This material is not considered hazardous in accordance with OSHA HazCom 2012, 29 CFR 1910.1200.

**Listed or exempt from listing/notification on the following chemical inventories:** AIIIC, DSL, ENCS, ISHL, KECI, PICCS, TCSI, TSCA

**Special Cases:**

Inventory	Status
IECSC	Restrictions Apply

**SARA 302:** No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302

**SARA (311/312) REPORTABLE GHS HAZARD CLASSES:** None.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	1 - < 2.5%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
SEVERELY HYDROTREATED HEAVY PARAFFINIC DISTILLATE	64742-54-7	17, 18, 19
ZINC ALKYL DITHIOPHOSPHATE	113706-15-3	13, 15, 17, 18, 19

--REGULATORY LISTS SEARCHED--

- |               |                  |                   |             |
|---------------|------------------|-------------------|-------------|
| 1 = ACGIH ALL | 6 = TSCA 5a2     | 11 = CA P65 REPRO | 16 = MN RTK |
| 2 = ACGIH A1  | 7 = TSCA 5e      | 12 = CA RTK       | 17 = NJ RTK |
| 3 = ACGIH A2  | 8 = TSCA 6       | 13 = IL RTK       | 18 = PA RTK |
| 4 = OSHA Z    | 9 = TSCA 12b     | 14 = LA RTK       | 19 = RI RTK |
| 5 = TSCA 4    | 10 = CA P65 CARC | 15 = MI 293       |             |

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16	OTHER INFORMATION
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Product Name: MOBIL DELVAC HDEO 15W-40  
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N/D = Not determined, N/A = Not applicable

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

- H303: May be harmful if swallowed; Acute Tox Oral, Cat 5
- H315: Causes skin irritation; Skin Corr/Irritation, Cat 2
- H317: May cause allergic skin reaction; Skin Sensitization, Cat 1
- H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1
- H401: Toxic to aquatic life; Acute Env Tox, Cat 2
- H402: Harmful to aquatic life; Acute Env Tox, Cat 3
- H411: Toxic to aquatic life with long lasting effects; Chronic Env Tox, Cat 2
- H412: Harmful to aquatic life with long lasting effects; Chronic Env Tox, Cat 3
- H413: May cause long lasting harmful effects to aquatic life; Chronic Env Tox, Cat 4

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

- Section 13: Disposal Considerations - Disposal Recommendations information was modified.
- Section 15: National Chemical Inventory Listing information was modified.

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The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

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Internal Use Only

MHC: 0B, 0B, 0, 0, 0, 0

PPEC: A

DGN: 7197652XUS (1025303)

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# SAFETY DATA SHEET

## SECTION 1 IDENTIFICATION OF THE HAZARDOUS CHEMICAL AND OF THE SUPPLIER

As of the revision date above, this SDS meets the regulations in Malaysia.

### PRODUCT IDENTIFIER

**Product Name:** MOBILFLUID 424  
**Product Description:** Base Oil and Additives  
**Product Code:** 201520508030, 522334

### RECOMMENDED USE OF THE CHEMICAL AND RESTRICTIONS ON USE

**Recommended Use:** Hydraulic/gearbox fluid  
**Restrictions on Use:** None unless specified elsewhere in this SDS.

### SUPPLIER DETAILS

**Supplier:** ExxonMobil Asia Pacific Pte.Ltd. (Company No.: 196800312N)  
1 Harbour Front Place  
#06-00 Harbour Front Tower One 098633 Singapore

**24 Hour Emergency Telephone** 1-800-815-308 / +1-703-527-3887

**Supplier General Contact** (+65) 6885 8000

**Supplier:** HT LUBRICANT SENDIRIAN BERHAD (646137-M)  
90, Jin Tampoi  
Johor Bahru 81200 Malaysia

**Supplier General Contact** +607-335 3663

**Supplier:** MOBILUB TRADING SENDIRIAN BERHAD (514125-H)  
No.1, Jalan Meranti Puchong,  
D'25@Meranti Puchong  
Selangor Darul Ehsan 47120 Malaysia

**Supplier General Contact** +603-8066 5081

**Supplier:** OPTIMUM FLUIDS MARKETING SENDIRIAN BERHAD (668909-D)  
PLOT 110, LGR.PERINDUSTRIAN, BUKIT MINYAK 11  
KAW.PENINDUSTRIAN, Bukit Mertajam  
Penang 14100 Malaysia

**Supplier General Contact** +604-510 2166

**Supplier:** TIMUR LUBE SDN. BHD. (806793-H)  
Wisma Hubline, 1st Floor, Lease No.3815, Lot 10914, Section 64  
KTLD, Jalan Datuk Abang Abdul Rahim



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**Supplier General Contact** 93450 Kuching Sarawak Malaysia +6082 338567

## SECTION 2 HAZARDS IDENTIFICATION

This material is not hazardous according to regulatory guidelines (see SDS Section 15).

### Other hazard information:

#### PHYSICAL / CHEMICAL HAZARDS

No significant hazards.

#### HEALTH HAZARDS

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

#### ENVIRONMENTAL HAZARDS

No significant hazards.

**NOTE:** This material should not be used for any other purpose than the recommended 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.

## SECTION 3 COMPOSITION AND INFORMATION OF THE INGREDIENTS OF THE HAZARDOUS CHEMICAL

This material is defined as a mixture.

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

Name	CAS#	Concentration*	GHS Hazard Codes
BORATE ESTER	POLYMER	0.1 - < 1%	H317
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	64742-46-7	1 - < 5%	H304
ZINC ALKYL DITHIOPHOSPHATE	68649-42-3	1 - < 2.5%	[H401], H411, H318

Note - any hazard code in brackets [Hxxx] is a GHS building block that was not adopted by Malaysia in the CLASS Regulation and therefore is not applicable in Malaysia and is shown for informational purposes only.

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

## SECTION 4 FIRST AID MEASURES

### 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.

### EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

### INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

### NOTE TO PHYSICIAN

None

## SECTION 5 FIRE FIGHTING MEASURES

### EXTINGUISHING MEDIA

**Appropriate Extinguishing Media:** Use water fog, foam, dry chemical or carbon dioxide (CO<sub>2</sub>) 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.

**Unusual Fire Hazards:** Pressurised mists may form a flammable mixture.

**Hazardous Combustion Products:** Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, Sulphur oxides

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** >192°C (378°F) [ASTM D-93]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** N/D

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY 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 6 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 5 for First Aid Advice. See Section 8 for advice on the minimum

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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: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor 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. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

## ENVIRONMENTAL PRECAUTIONS

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

## METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP

**Land Spill:** Stop leak if you can do so without risk. Recover by pumping or with suitable absorbent.

**Water Spill:** Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Remove from the surface by skimming or with suitable absorbents. Seek the advice of a specialist before using dispersants.

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.

## SECTION 7 HANDLING AND STORAGE

### PRECAUTIONS FOR SAFE HANDLING

Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source). When the material is handled in bulk, an electrical spark could ignite any flammable vapors from liquids or residues that may be present (e.g., during switch-loading operations). Use proper bonding and/or earthing procedures. However, bonding and earthing may not eliminate the hazard from static accumulation. Consult local applicable standards for guidance. Additional references include American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practice on Static Electricity) or CENELEC CLC/TR 50404 (Electrostatics - Code of practice for the avoidance of hazards due to static electricity).

**Static Accumulator:** This material is a static accumulator.

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

### CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

The type of container used to store the material may affect static accumulation and dissipation. Do not store in open or unlabelled containers. Keep away from incompatible materials.

**SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION**

**CONTROL PARAMETERS**

**EXPOSURE LIMIT VALUES**

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

Substance Name	Form	Limit/Standard			Note	Source
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Mist.	PEL	5 mg/m <sup>3</sup>			Malaysia PEL
HYDROTREATED MIDDLE DISTILLATE (PETROLEUM)	Inhalable fraction.	TWA	5 mg/m <sup>3</sup>			ACGIH

**Exposure limits/standards for materials that can be formed when handling this product:** When mists/aerosols can occur the following is recommended: 5 mg/m<sup>3</sup> - ACGIH TLV (inhalable fraction).

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

**Biological limits**

No biological limits allocated.

**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:

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

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.

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**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:

No protection is ordinarily required under normal conditions of use. Nitrile, Viton

**Eye Protection:** If contact is likely, safety glasses with side shields 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 skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

## 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:** Amber

**Odour:** Characteristic

**Odour Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 °C):** 0.884

**Flammability (Solid, Gas):** N/A

**Flash Point [Method]:** >192°C (378°F) [ASTM D-93]

**Flammable Limits (Approximate volume % in air):** LEL: 0.9 UEL: 7.0

**Autoignition Temperature:** N/D

**Boiling Point / Range:** > 316°C (600°F)

**Decomposition Temperature:** N/D

**Vapour Density (Air = 1):** > 2 at 101 kPa

**Vapour Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 °C

**Evaporation Rate (n-butyl acetate = 1):** N/D

**pH:** N/A

**Log Pow (n-Octanol/Water Partition Coefficient):** > 3.5

**Solubility in Water:** Negligible

**Viscosity:** 55 cSt (55 mm<sup>2</sup>/sec) at 40°C | 9.3 cSt (9.3 mm<sup>2</sup>/sec) at 100°C

**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** N/D

**Melting Point:** N/A

**Pour Point:** -36°C (-33°F)

**DMSO Extract (mineral oil only), IP-346:** < 3 %wt

**SECTION 10 STABILITY AND REACTIVITY**

**REACTIVITY:** See sub-sections below.

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

**CONDITIONS TO AVOID:** Excessive heat. High energy sources of ignition.

**INCOMPATIBLE MATERIALS:** Strong oxidisers

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

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

**SECTION 11 TOXICOLOGICAL INFORMATION**

**INFORMATION ON TOXICOLOGICAL EFFECTS**

<b>Hazard Class</b>	<b>Conclusion / Remarks</b>
<b>Inhalation</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
<b>Ingestion</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
<b>Skin</b>	
Acute Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin Corrosion/Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
<b>Eye</b>	
Serious Eye Damage/Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.
<b>Sensitisation</b>	
Respiratory Sensitization: No end point data for material.	Not expected to be a respiratory sensitizer.
Skin Sensitization: No end point data for material.	Not expected to be a skin sensitizer. Based on assessment of the components.
<b>Aspiration:</b> Data available.	Not expected to be an aspiration hazard. Based on physico-chemical properties of the material.
<b>Germ Cell Mutagenicity:</b> No end point data for material.	Not expected to be a germ cell mutagen. Based on assessment of the components.
<b>Carcinogenicity:</b> No end point data for material.	Not expected to cause cancer. Based on assessment of the components.
<b>Reproductive Toxicity:</b> No end point data for material.	Not expected to be a reproductive toxicant. Based on assessment of the components.
<b>Lactation:</b> No end point data for material.	Not expected to cause harm to breast-fed children.
<b>Specific Target Organ Toxicity (STOT)</b>	
Single Exposure: No end point data for	Not expected to cause organ damage from a single exposure.

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material.	
Repeated Exposure: No end point data for material.	Not expected to cause organ damage from prolonged or repeated exposure. Based on assessment of the components.

**OTHER INFORMATION**

**For the product itself:**

Component concentrations in this formulation would not be expected to cause skin sensitization, based on tests of the components, this formulation, or similar formulations.

**Contains:**

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

**IARC Classification:**

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

--REGULATORY LISTS SEARCHED--

1 = IARC 1

2 = IARC 2A

3 = IARC 2B

**SECTION 12 ECOLOGICAL INFORMATION**

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 -- Not expected to be harmful to aquatic organisms.

**MOBILITY IN SOIL**

Base oil component -- Low solubility and floats and is expected to migrate from water to the land.  
 Expected to partition to sediment and wastewater solids.

**PERSISTENCE AND DEGRADABILITY**

**Biodegradation:**

Base oil component -- Expected to be inherently biodegradable

**BIOACCUMULATIVE POTENTIAL**

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

**OTHER ADVERSE EFFECTS**

No adverse effects are expected.

**SECTION 13 DISPOSAL INFORMATION**

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 METHODS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products. Protect the environment. Dispose of used oil at designated sites. Minimize skin contact. Do not mix used oils with solvents, brake fluids or coolants.

## REGULATORY DISPOSAL INFORMATION

**Environmental Quality (Scheduled Wastes) Regulations 2005 waste code:** SW 306

Note: These codes are assigned based upon the most common uses for this material and may not reflect contaminants resulting from actual use. Waste producers need to assess the actual process used when generating the waste and its contaminants in order to assign the proper waste disposal code(s); This material is considered as hazardous waste pursuant to Environmental Quality (Scheduled Wastes) Regulations 2005.

**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 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.**

## SECTION 14 TRANSPORT INFORMATION

**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

## SECTION 15 REGULATORY INFORMATION

**This material is not hazardous as defined by the Occupational Safety and Health (Classification, Labeling and Safety Data Sheet of Hazardous Chemicals) Regulations 2013.**

## REGULATORY STATUS AND APPLICABLE LAWS AND REGULATIONS

**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):** AIIIC, DSL, ENCS, IECS, ISHL, KECI, PICCS, TCSI, TSCA

### **National Laws and Regulations:**

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health)



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Regulations 2000

<b>SECTION 16 OTHER INFORMATION</b>
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**List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:**

<b>Acronym</b>	<b>Full text</b>
N/A	Not applicable
N/D	Not determined
NE	Not established
VOC	Volatile Organic Compound
AIIC	Australian Inventory of Industrial Chemicals
AIHA WEEL	American Industrial Hygiene Association Workplace Environmental Exposure Limits
ASTM	ASTM International, originally known as the American Society for Testing and Materials (ASTM)
DSL	Domestic Substance List (Canada)
EINECS	European Inventory of Existing Commercial Substances
ELINCS	European List of Notified Chemical Substances
ENCS	Existing and new Chemical Substances (Japanese inventory)
IECSC	Inventory of Existing Chemical Substances in China
KECI	Korean Existing Chemicals Inventory
NDSL	Non-Domestic Substances List (Canada)
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
TLV	Threshold Limit Value (American Conference of Governmental Industrial Hygienists)
TSCA	Toxic Substances Control Act (U.S. inventory)
UVCB	Substances of Unknown or Variable composition, Complex reaction products or Biological materials
LC	Lethal Concentration
LD	Lethal Dose
LL	Lethal Loading
EC	Effective Concentration
EL	Effective Loading
NOEC	No Observable Effect Concentration
NOELR	No Observable Effect Loading Rate

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

H304: May be fatal if swallowed and enters airways; Aspiration, Cat 1

H317: May cause allergic skin reaction; Skin Sensitisation, Cat 1

H318: Causes serious eye damage; Serious Eye Damage/Irr, Cat 1

H401: Toxic to aquatic life; Acute Env Tox, Cat 2

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

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

No revision information

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Product Name: MOBILFLUID 424  
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affiliates in which they directly or indirectly hold any interest.

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DGN: 2005936XMY (545249)  
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*ATTACHMENT B*

*Application for a Solid Waste Beneficial Use Determination*

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# Application for a Solid Waste Beneficial Use Determination

DEQ USE ONLY - BUSINESS OFFICE

Date Received: \_\_\_\_\_

Amount Received: \_\_\_\_\_

Check No.: \_\_\_\_\_

Deposit No.: \_\_\_\_\_

Forward confirmation of fee payment for:  
Eastern Region to DEQ, The Dalles  
Northwestern Region to DEQ-NWR, Portland  
Western Region to DEQ, Salem

## A. REFERENCE INFORMATION *(Please type or print clearly.)*

<u>West Side Quarry LLC</u> Legal name of applicant		<u>West Side Quarry</u> Business name of applicant if different	
<u>PO Box 1060</u> Mailing address	<u>Woodburn</u> City	<u>OR</u> State	<u>97071</u> Zip
_____ Phone	_____ Mobile	_____ E-mail	_____ Fax

<u>West Side Quarry LLC</u> Generator of solid waste (may be same as applicant)			
<u>PO Box 1060</u> Mailing address	<u>Woodburn</u> City	<u>OR</u> State	<u>97071</u> Zip
_____ Phone	_____ Mobile	_____ E-mail	_____ Fax

## B. TYPE OF BENEFICIAL USE DETERMINATION REQUESTED

Beneficial Use Determination applications are categorized based on the type of information and potential amount of work required by DEQ staff to review application materials and render a decision. A tiered review and fee system has been established in rule. The tiers are:

- Tier 1 For a beneficial use of a solid waste that does not contain hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product and that will be used in a manufactured product;
- Tier 2 For a beneficial use of a solid waste that contains hazardous substances significantly exceeding the concentration in a comparable raw material or commercial product, or involves application on the land;
- Tier 3 For a beneficial use of a solid waste that requires research, such as a literature review or risk assessment, or for a demonstration project to demonstrate compliance with this rule.

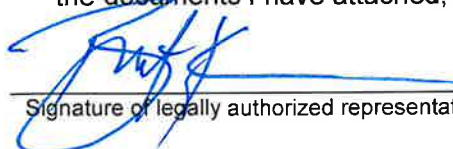
I am applying for a  Tier 1  Tier 2  Tier 3 determination.

## C. DOES THIS PROPOSED BENEFICIAL USE INVOLVE LAND APPLICATION OF ANY MATERIAL?

Yes  No

## D. SIGNATURE

I hereby certify by my signature below that the information contained in this application, and the documents I have attached, are true and correct to the best of my knowledge and belief.

	<u>Brent Kerr</u>	<u>Manager</u>	<u>6-21-21</u>
Signature of legally authorized representative	Print name	Title	Date

**E. REQUIRED ATTACHMENTS TO THIS APPLICATION** *(For an application to be complete, it must provide the required information for each listed item of the tier which is being applied for.)*

**Tier 1**

- A description of the material, manner of generation, and estimated quantity to be used each year;
- A description of the proposed use;
- A comparison of the chemical and physical characteristics of the material proposed for use with the material it will replace;
- A demonstration of compliance with the performance criteria in OAR 340-093-0280 based on knowledge of the process that generated the material, properties of the finished product, or testing; and
- Any other information that DEQ may require to evaluate the proposal.

**Tier 2**

- The information required for a Tier 1 application;
- Sampling and analysis that provides chemical, physical, and biological characterization of the material and that identifies potential contaminants in the material or the end product, as applicable;
- A risk screening comparing the concentration of hazardous substances in the material to existing, DEQ approved, risk-based screening level values, and demonstrating compliance with acceptable risk levels;
- Location or type of land use where the material will be applied, consistent with the risk scenarios used to evaluate risk;
- Contact information of property owner(s) if this is a site-specific land application proposal, including name, address, phone number, e-mail, site address and site coordinates (latitude and longitude); and
- A description of how the material will be managed to minimize potential adverse impacts to public health, safety, welfare, or the environment.

**Tier 3**

- The information required for a Tier 1 & 2 application;
- A discussion of the justification for the proposal;
- An estimate of the expected length of time that would be required to complete the project, if it is a demonstration; and
- If it is a demonstration project, the methods proposed to ensure safe and proper management of the material.

**F. PERFORMANCE CRITERIA** *(For all tiers - An application for a beneficial use determination must demonstrate satisfactory compliance with the following performance criteria.)*

**The use is productive, including:**

- ◆ There is an identified or reasonably likely use for the material that is not speculative;
- ◆ The use is a valuable part of a manufacturing process, an effective substitute for a valuable raw material or commercial product, or otherwise authorized by DEQ, and does not constitute disposal; and
- ◆ The use is in accordance with applicable engineering standards, commercial standards, and agricultural or horticultural practices.

**The use will not create an adverse impact to public health, safety, welfare, or the environment, including:**

- ◆ The material is not a hazardous waste under ORS 466.005;
- ◆ Until the time the material is used in accordance with a beneficial use determination, the material will be managed, including any storage, transportation, or processing, to prevent releases to the environment or nuisance conditions;
- ◆ Hazardous substances in the material do not significantly exceed the concentration in a comparable raw material or commercial product, or do not exceed naturally occurring background concentrations, or do not exceed acceptable risk levels, including evaluation of persistence and potential bioaccumulation, when the material is managed according to a beneficial use determination.

**The use will not result in the increase of a hazardous substance in a sensitive environment.**

**The use will not create objectionable odors, dust, unsightliness, fire, or other nuisance conditions.**

**The use will comply with all applicable federal, state, and local regulations.**

**G. FEES** (Must accompany the application for it to be considered complete)

<input type="checkbox"/>	Tier 1 beneficial use determination	\$1,000
<input checked="" type="checkbox"/>	Tier 2 beneficial use determination	\$2,000
<input type="checkbox"/>	Tier 3 beneficial use determination	\$5,000

Make checks out to: **Oregon DEQ**

Total fees included: \$2,000

**H. APPLICATION PROCEDURE**

Step 1

Contact a DEQ staff person for assistance with the preparation of the application. DEQ staff will help with: 1) Determination of the eligibility for a beneficial use determination of a particular waste or process; and, 2) If eligible, establish the tier of beneficial use determination review required and associated fee to submit with the application.

Step 2

Mail the original signed application, all attachments, including the fee payment plus one extra copy to the appropriate regional office (see listing below.) Note that DEQ review work will not begin until a complete application packet is received. Incomplete applications may be returned. DEQ recommends the applicant keep a full copy of all application materials to guard against possible loss in transit.

Step 3

DEQ will contact the applicant, acknowledging receipt of the application, and will identify the staff person assigned to carryout the review. This staff person will contact the applicant if any additional information is needed.

Region	Counties Served	Address & Phone
Eastern Region	Baker, Crook, Deschutes, Gilliam, Grant, Harney, Hood River, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler	Eastern Region Department of Environmental Quality 400 E Scenic Drive, Ste 2.307 The Dalles, OR 97058 (541) 298-7255 ext. 221
Northwest Region	Clatsop, Clackamas, Columbia, Multnomah, Tillamook, and Washington	Northwest Region DEQ Solid Waste Programs 700 NE Multnomah Street, Suite 600 Portland, OR 97232 (503) 229-5353
Western Region	Benton, Coos, Curry, Douglas, Jackson, Josephine, Lane, Lincoln, Linn, Marion, Polk, and Yamhill	Western Region DEQ Solid Waste Programs 165 E 7th Ave., Suite 100 Eugene, OR 97401 (541) 687-7465

*ATTACHMENT C*

*Yamhill County Letter of Agreement*

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# Yamhill County

## DEPARTMENT OF PLANNING AND DEVELOPMENT

525 NE 4th STREET • McMINNVILLE, OREGON 97128

Phone:(503) 434-7516 • Fax:(503)434-7544 • TTY: (800) 735-2900 • Internet Address: <http://www.co.yamhill.or.us/planning>

July 10, 2020

Vial Fotheringham LLP  
Attn.: T. Beau Ellis  
17355 SW Boones Ferry Road, Suite A  
Lake Oswego, OR 97035

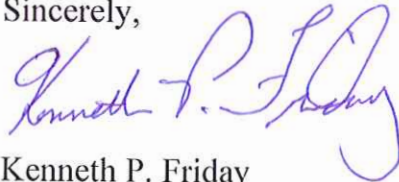
**Re: Accessory Use to Asphalt Batch Plant at Laurelwood Quarry  
14375 NE Cunningham Lane, Gaston, OR 97119 (Tax Lot 2317-1000)**

Dear Mr. Ellis,

The recycling of rock and asphalt has been an accessory use within the Mineral Resource zones. I have reviewed your letter of May 22, 2020 and therefore agree that the recycling of asphalt shingles described in your letter is an approved accessory use in the MR-1 Mineral Resource zone and does not require additional land use approval. I hope this interpretation is of assistance.

If you have any questions, please do not hesitate to contact me at 503-434-7516.

Sincerely,



Kenneth P. Friday  
Planning Director

KF:kf





**T. BEAU ELLIS**  
503.684.4111 x336  
DIRECT 503.594.8116  
FAX 503.598.7758  
[Beau.Ellis@vf-law.com](mailto:Beau.Ellis@vf-law.com)  
Admitted to practice in:  
Oregon

May 22, 2020

*Via electronic mail*

P16566-001

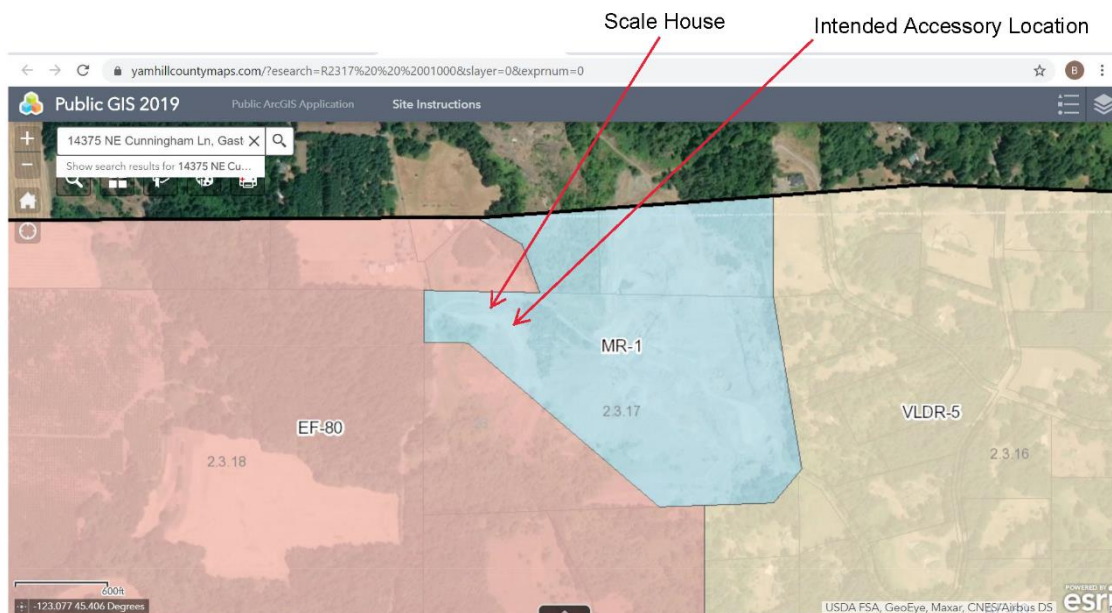
Ken Friday  
Yamhill County Planning & Development  
525 NE Fourth Street  
McMinnville, Oregon 97128

E: [planning@co.yamhill.or.us](mailto:planning@co.yamhill.or.us)

RE: *Accessory Use to Asphalt Batch Plant at Laurelwood Quarry  
14375 NE Cunningham Lane, Gaston, Oregon 97119 (T2S, R3W, Section 17, TL 1000)*

Dear Mr. Friday,

I represent Western Rock Resources, LLC. Western Rock Resources, LLC owns the Laurelwood Quarry located at the site commonly known as 14375 NE Cunningham Lane, Gaston, Oregon 97119. The southern portion of this site is located in Yamhill County, whereas the northern portion of the site is located within Washington County. A significant portion of the property within Yamhill County's jurisdiction is designated Mineral Resource (MR-1). The property subject to this requested determination focuses solely on the land zoned with the Mineral Resource District (MR-1) designation. This area is identified in the below embedded image:



May 22, 2020

Letter to Ken Friday, Planning Director for Yamhill County

RE: Laurelwood Quarry Accessory Use Determination Request

P16566-001

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My client understands the MR-1 zoning permits outright the use of the MR-1 zoned area of the property for portable hot-mix batching plants (asphalt plants). *See YCZDO 404.02 E*. The purpose of this letter is to seek an accessory use determination subordinate to the outright permitted asphalt plant use.

My client desires to use and incorporate recycled asphalt shingles (“RAS”) into its asphalt plant process. The use of RAS as part of the asphalt mix is an accepted practice in the construction industry. The incorporation of RAS into the asphalt mix my client produces also helps my client remain a good steward of the environment, ensuring that asphalt shingles are recycled, rather than dumped in a landfill.

The RAS operation is relatively straightforward. First, asphalt shingles are acquired and transported to the site. Once a sufficient supply of asphalt shingle material is sourced and stockpiled, the shingles are then ground into a useable, asphalt plant manageable size. Finally, the now-ground asphalt shingle product is incorporated into new asphalt material for construction projects, ready for sale and paving into road improvement projects regionally.

The use of the area intended to be occupied for the RAS operation is subordinate to and dependent upon the asphalt plant. That is to say, the RAS operation is accessory to the outright permitted use of an asphalt plant onsite. My client requests the Yamhill County formally acknowledge the within-described RAS operation as an accessory use to the outright permitted use of a portable hot-mix batch plant (asphalt plant) on this site.

If you require any further information in order to process this accessory use determination request, I am more than willing to provide additional information. Thank you for your professional courtesies.

Best wishes,

**VIAL FOTHERINGHAM LLP**

*/s/ T. Beau Ellis*

T. Beau Ellis  
Attorney at Law

TBE:tbe