EMERGENCY RESPONSE REPORT

Republic Services-3681 Columbus Hauling

Spill Response-Tractor Release | Petroleum | Petroleum Hydraulic Oil 50.0 Gallons | Zanesville, OH
1675 Fairview Rd
Zanesville, OH

Claim No: 17388F034502

Driver Name: Thomas Patterson

Incident Date: February 26, 2017
Closure Date: April 3, 2017

Prepared for
Andrew Dugan
CCMSI
Claims Representative
PO Box 27920
Scottsdale, AZ 85255

Prepared by
Cal Rainey
Project Manager
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NATIONAL RESPONSE CENTER 1-800-424-8802
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applicable federal and/or state Freedom of Information and Privacy Laws

Incident Report # 1171971

INCIDENT DESCRIPTION

*Report taken at 15:00 on 26-FEB-17
Incident Type: MOBILE
Incident Cause: EQUIPMENT FAILURE
Affected Area: STORM DRAIN
Incident occurred on 26-FEB-17 at 14:30 local incident time.
Affected Medium: WATER   STORM DRAIN

SUSPECTED RESPONSIBLE PARTY

Organization:  REPUBLIC SERVICES
Type of Organization: PRIVATE ENTERPRISE

INCIDENT LOCATION

1675 FAIRVIEW RD    County: MUSKINGUM
City: ZANESVILLE   State: OH

RELEASED MATERIAL(S)
CHRIS Code: OHY   Official Material Name: HYDRAULIC OIL
Also Known As:
Qty Released: 50 GALLON(S)           Qty in Water: 1 GALLON(S)

DESCRIPTION OF INCIDENT
CALLER REPORTED THAT A GARBAGE TRUCK HYDRAULIC LINE DISCHARGED 25-50
GALLONS OF HYDRAULIC FLUID ON THE CONCRETE AND STORM DRAIN DUE TO
MECHANICAL FAILURE.

INCIDENT DETAILS

Road Mile Marker:
Length of Service Disruption:
Airbag Deployed: UNKNOWN
---WATER INFORMATION---
Body of Water: STORM DRAIN
Tributary of:
Nearest River Mile Marker:
Water Supply Contaminated: UNKNOWN

---MOBILE INFORMATION---
Vehicle Type: DUMP TRUCK
Vehicle Fuel Capacity:
Hazmat Carrier: UNKNOWN
Carrier Licensed: UNKNOWN
Suspected Non Compliance: UNKNOWN
Cargo Capacity:
Cargo On Board:

_________________________________________________________

IMPACT
Fire Involved: NO   Fire Extinguished: UNKNOWN

INJURIES: NO Hospitalized: Empl/Crew: Passenger:
FATALITIES: NO Empl/Crew: Passenger: Occupant:
EVACUATIONS: NO Who Evacuated: Radius/Area:

Damages: NO  Hours Direction of
Closure Type Description of Closure Closed Closure

N
Air:
N Major
Road: Artery:N
N
Waterway: N
Track:

Environmental Impact: UNKNOWN
Media Interest: UNKNOWN   Community Impact due to Material:

_________________________________________________________

REMEDIAL ACTIONS
CONTRACTOR HAS BEEN HIRED
Release Secured: YES
Release Rate:
Estimated Release Duration:

_________________________________________________________

WEATHER
Weather: UNKNOWN, °F

_________________________________________________________

ADDITIONAL AGENCIES NOTIFIED
Federal:
State/Local:
State/Local On Scene:
State Agency Number:
NOTIFICATIONS BY NRC
CENTERS FOR DISEASE CONTROL (GRASP)
26-FEB-17 15:09
DHS NOC (NOC)
26-FEB-17 15:09
DHS DEFENSE THREAT REDUCTION AGENCY (CHEMICAL AND BIOLOGICAL TECHNOLOGY)
26-FEB-17 15:09
DOT CRISIS MANAGEMENT CENTER (MAIN OFFICE)
26-FEB-17 15:09
U.S. EPA V (MAIN OFFICE)
26-FEB-17 15:09
FBI CLEVELAND FIELD OFC (MAIN OFFICE)
26-FEB-17 15:09
NATIONAL INFRASTRUCTURE COORD CTR (MAIN OFFICE)
26-FEB-17 15:09
NOAA RPTS FOR OH (MAIN OFFICE)
26-FEB-17 15:09
NATIONAL RESPONSE CENTER HQ (AUTOMATIC REPORTS)
26-FEB-17 15:09
OHIO DEPARTMENT OF HEALTH (OHDOH)
26-FEB-17 15:09
OHIO EMERGENCY MGMT AGENCY (WATCH OFFICE)
26-FEB-17 15:09
OH STRATEGIC ANALYSIS AND INFO CTR (OHIO COMMAND CENTER)
26-FEB-17 15:09
CINCINNATI REG. TERR. EARLY WARNING (MAIN OFFICE)
26-FEB-17 15:09
REPORTING PARTY (RP SUBMITTER)
26-FEB-17 15:09
SECTOR OHIO VALLEY (COMMAND CENTER)
26-FEB-17 15:09
OFFICE OF ENV. POLICY & COMPLIANCE (MAIN OFFICE)
26-FEB-17 15:09
OH EPA ATTN: DUTY OFFICER (MAIN OFFICE)
26-FEB-17 15:09
OH EPA ATTN: DUTY OFFICER (SOUTHEAST DISTRICT OFFICE)
26-FEB-17 15:09
USCG DISTRICT 8 (MAIN OFFICE)
26-FEB-17 15:09

ADDITIONAL INFORMATION

*** END INCIDENT REPORT #1171971 ***
Report any problems by calling 1-800-424-8802
PLEASE VISIT OUR WEB SITE AT http://www.nrc.uscg.mil
State Final Report
March 28, 2017

Ohio EPA, DERR – ER
Lazarus Government Center
50 West Town Street, Suite 700
P.O. Box 1049
Columbus, OH 43216-1049

jeffrey.beattie@epa.ohio.gov

ATTN: ER Records Mgmt.
muskingumema@muskingumcounty.org

RE: Corrective Action Interim Report

Responsive Party Information:
Republic Services
933 Frank Road
Columbus, OH 43223-3856
614-353-9707

Incident Description: Hydraulic Oil (Petroleum) Release
Incident Date/Time: February 26, 2017 at 1430 ET

Incident Location:
Kellogg Facility
1675 Fairview Rd.
Zanesville, OH 43701

Property Owner Information: Kellogg Company
Property Owner Address: 1675 Fairview Road, Zanesville, OH 43701

NRC Report Number: 1171971
Ohio EPA Number: Not Given
Muskingum County LEPC Tracking Number: None Given
ERTS Project Number: 02262017ZAOH52020

To Whom it May Concern,

The following serves as the final 30-day written report required under Ohio Administrative Code, Title 3750, Section 3750-25-25 (A) (2) (a) – (b), detailing the emergency response and corrective action taken in response to the incident that occurred on February 26, 2017, at the above referenced location.

Emergency Response & Training Solutions (ERTS) is retained by Republic Services to fulfill all environmental remediation and reporting requirements as a result of any petroleum releases or discharges.

Incident Details

Actual time, date and duration of the release or discharge:

The release occurred on February 26, 2017 at 1430 EST. It was originally reported that a Republic Services truck released hydraulic oil at a customer’s location due to a mechanical failure. It was reported that approximately 30 gallons of hydraulic oil released.
Actual time and date of discovery of the release or discharge:

ERTS was notified of the release on February 26, 2017 at 1430 EST.

Actions taken to respond to and contain the release or discharge:

On February 26, 2017 at 1445 EST, ERTS dispatched Environmental Management Specialists (EMS) from Zanesville, OH to the site for initial response activities.

On February 26, 2017 at 1730 EST, EMS personnel arrived onsite to conduct cleanup operations. The onsite investigation confirmed that approximately 30 gallons of hydraulic oil released to a 25’ x 10’ area of concrete parking lot. A small amount of oil traveled below a dumpster and impacted a drain.

On February 26, 2017 at 1913 EST, ERTS was notified that Kellogg hired a company to perform cleanup operations. EMS personnel and services are no longer needed at this time. At 1930 ET EMS departed the site.

Indicate the Ohio EPA case number and the National Response Center case number:

NRC Report Number: 1171971
Ohio EPA case number: Not Given
Muskingum County LEPC Tracking Number: None Given

Location of the release or discharge:

Kellogg Facility
1675 Fairview Rd.
Zanesville, OH 43701

Chemical name and Chemical Abstract Service (CAS) registry number of the substance involved in the release or discharge:

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly refined mineral oil</td>
<td>Mixture</td>
<td>70-100%</td>
</tr>
</tbody>
</table>

Quantity and duration of the discharge.

Approximately 30 gallons. The duration of the release was immediate.

Environmental Impact

(a) Name of media affected: Storm drain, concrete parking lot
(b) Name of waterway and length of area affected: N/A
(c) Size of impacted area (sq ft): 25’ x 10’ of concrete
(d) Extent of damage to wildlife and/or vegetation: N/A
(e) Extent of impact to human health and safety: N/A
Emergency Response and Training Solutions

If the release or discharge was monitored, indicate the method of detection, concentrations, and wind direction and speed if the release was airborne:

The release was monitored by visual means and by an LEL monitor.

Indicate the amount of product that was recovered or neutralized and how it was recovered or neutralized.

EMS did not manage any waste from this release. For additional information regarding waste, please contact Amy Louwers of Kellogg at (740) 450-9012.

Describe any actions taken to further reduce the impact of the release or discharge

Please contact Amy Louwers for additional information.

Prevention Measures

This incident is a one-time event. For more information on plans to prevent recurrence of a similar discharge or release, please contact Republic Services.

Health Risks

Describe any known or anticipated acute or chronic health risks associated with the release or discharge:

This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Describe any extenuating circumstances which caused the release or discharge:

This release was caused by a mechanical failure.

Provide a chronological summary of the incident. Include a chronology of communications with state and local government agencies:

February 26, 2017

- 1445 EST: ERTS received notification of a 30 gallon hydraulic oil release and dispatched EMS for initial response and remediation.
- 1502 EST: ERTS notified the NRC
- 1509 EST: ERTS notified the Ohio EPA
- 1517 EST: ERTS left a voicemail with the Muskingum County LEPC.
- 1730 EST: EMS personnel arrive onsite to conduct initial response activities.
- 1930 EST: EMS personnel departed the site due to the Kellogg contracting a different company to perform cleanup operations.

Documentation

There will be no waste documentation available from ERTS.
Conclusions and Recommendations:

This document serves as a final report for the above referenced incident. ERTS recommends that this incident be closed.

For additional information regarding this incident please contact Amy Louwers of Kellogg at (740) 450-9012

ERTS and Republic Services appreciate your assistance in this matter. If you have any questions regarding this project, please do not hesitate to contact me at (440) 349-2700.

Respectfully,
Emergency Response & Training Solutions

Spencer Meyers
Spencer Meyers
Project Manager
Emergency Response & Training Solutions

Incident Response Report
Emergency Response and Training Solutions

Republic Services-3681 Columbus Incident Response Report
ERTS Alert #52020  Client Reference No: 3681
Project Manager: Cal Rainey

Intake Information

Call to ERTS: 2/26/2017  2:45:00PM
Incident Reported by: John Mastronicolas of
Phone: (614) 353-9707
Location of Incident: Kellogg

Incident Occurred: February 26, 2017  2:30 pm  Unknown?

Initial Incident Description: At 1445 EST, John Mastronicolas with Republic Services notified ERTS of a truck release at a customer location in Zanesville, OH. It was reported that 25-50 gallons of hydraulic oil released from truck #3050 due to a mechanical failure. The release impacted the concrete parking lot and the driver believes a minimal amount impacted a nearby storm drain. At 1502 EST, ERTS notified NRC. Operator Fuentes provided #1171971. At 1509 EST, ERTS notified Ohio EPA. Operator Robinson took receipt of the call. At 1517 EST, ERTS notified Muskingum County EMA (LEPC). A voicemail was left providing incident details. ERTS has dispatched EMS to respond and perform cleanup activities. At 1530 EST, EMS provided an ETA of 1 hour.

Reported material released name/description:

- Petroleum

Incident Category(s): Spill Response-Tractor Release

Truck Number: 3050  Trailer Number: N/A  Domicile Terminal: N/A
Driver Name: Thomas Patterson
Onsite Contact: Thomas  Phone: (614) 893-9442
Reported Impact Medium: Concrete;Drain
Reported Cause of Incident: Mechanical Failure

Network Vendor Dispatch

Contractor(s): Environmental Management Specialists (OH)- LTL  Contractor ETA: February 26, 2017  4:30 pm

Weather in the Area: 42° clear
# Emergency Response and Training Solutions

Republic Services-3681 Columbus Incident Response Report

ERTS Alert #52020     Client Reference No: 3681

Project Manager: Cal Rainey

## Regulatory Notifications

<table>
<thead>
<tr>
<th>Fed RQ Exceeded or Potential to Exceed:</th>
<th>Tracking No</th>
<th>Contact Name</th>
<th>Notification Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCR Notified:</td>
<td>1171971</td>
<td>Fuentes</td>
<td>February 26, 2017 3:02 pm</td>
</tr>
<tr>
<td>SERC Notified:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Env Agency Notified:</td>
<td>Pending</td>
<td>Robinson</td>
<td>February 26, 2017 3:09 pm</td>
</tr>
<tr>
<td>Other Notified:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOT 5800 or TDG Reportable:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State Police Notified:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Contractor Site Accessment

- Confirm Material Released: hydraulic oil
- Size of Impacted Area: 25' x 10'
- Confirmed Amount Released: 30 gallons
- Confirmed Medium Impacted: concrete, drain
- Specific Area of Release: parking lot

## Post Accessment

- Was the waste taken for disposal by the contractor: No
- Was the waste staged onsite until the contractor can return to collect and dispose of the waste: No
- Amount of Waste Generated: N/A
- Container Type: N/A
- Content of Containers: N/A
- Is Additional Remediation Needed: No
- Did the Cost Reserve Change: No
- If Yes, New Reserve: na
- If Yes, Why did the reserve change: na

## Disposal Classification(s):

- Disposal Classification Not Specified

## Remediation
Emergency Response & Training Solutions

Contractor Narrative
**Chronologic Reporting Log**

<table>
<thead>
<tr>
<th>Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1800</td>
<td>Troy yanked mobilized to stop (Zuille)</td>
</tr>
<tr>
<td>1845</td>
<td>Note saw E85 mobilize to GP Stop - Pick up unit 20 (service truck)</td>
</tr>
<tr>
<td>1826</td>
<td>Note spoke w/ Cal - Kellogg's opens security gate.</td>
</tr>
<tr>
<td></td>
<td>Spill is approx 35' long x 15' wide x 50-75' of tire tracks from</td>
</tr>
<tr>
<td></td>
<td>Roberts' driving through oil. (No Check) Turnpike company has put</td>
</tr>
<tr>
<td></td>
<td>down pads, some 2&quot; beam + some clay absorbent to contain.</td>
</tr>
<tr>
<td></td>
<td>Some product had entered drain est 10 gallon max. Est 35 gallon on driveway. (Garcia, PPH. Pictures taken and</td>
</tr>
<tr>
<td></td>
<td>sent to Cal. Begin cleanup after 1ST.</td>
</tr>
<tr>
<td>1600</td>
<td>EMS loads 1st bag of clay absorbent over main spill area.</td>
</tr>
<tr>
<td></td>
<td>Begin grinding in &amp; sweeping up.Remove saturated boom + pads.</td>
</tr>
<tr>
<td>1720</td>
<td>Continue to sweep up, EMS out of clay absorbent. Troyn</td>
</tr>
<tr>
<td></td>
<td>Young departs to pick up additional clay absorbent. Note</td>
</tr>
<tr>
<td></td>
<td>continues grinding &amp; sweeping up &amp; shoveling saturated oil into</td>
</tr>
<tr>
<td></td>
<td>drums</td>
</tr>
<tr>
<td>1930</td>
<td>Zemba arrives (Calle) in by Amy (owners / Kellogg)</td>
</tr>
<tr>
<td></td>
<td>I spoke with Dennis on Amy and Cal - it was decided</td>
</tr>
<tr>
<td></td>
<td>that Zemba would finish, Drews left on-site for Zemba</td>
</tr>
<tr>
<td></td>
<td>to handle</td>
</tr>
<tr>
<td>1944</td>
<td>EMS departs</td>
</tr>
<tr>
<td>1954</td>
<td>EMS at shop - stock trailer/ data log book</td>
</tr>
<tr>
<td>2100</td>
<td>Troyn - shop work</td>
</tr>
<tr>
<td>2145</td>
<td>Troyn - shop work</td>
</tr>
</tbody>
</table>

Amy said she told Republic to call off Republic Responders since she was calling Zemba. This occurs during a Kelloggs shift change and she does not think the word got passed down. Cal / Amy spoke and they decided EMS should demolish and Zemba would finish.
<table>
<thead>
<tr>
<th>Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1445</td>
<td>Received call to go to initial spill address on behalf of Republic Svc.</td>
</tr>
<tr>
<td>1510</td>
<td>Arrived on site. Met with Chris Holm (EPA), Amy (Kellogg) and Mike Cook (Zember). Took pictures of impacted creek.</td>
</tr>
<tr>
<td>1645</td>
<td>Chris asked to find out if hydraulic control was vegetable based or petroleum based but unable to determine.</td>
</tr>
<tr>
<td>1700</td>
<td>Learned that Zember had sprayed disperser around catch basin 9 (spill zone), pressure washed material in sand catch basin and then proceeded to move out catch basin. Not sure it catch basin lminated ever retained.</td>
</tr>
<tr>
<td>1845</td>
<td>Informed Chris that the creek needed to be reinstated in place because sheen was traveling through the pond and been currently. Also noticed boom was installed incorrectly.</td>
</tr>
<tr>
<td>2000</td>
<td>Complete.</td>
</tr>
</tbody>
</table>
Photos
Emergency Response & Training Solutions

MSDS
1. Product and company identification

Product name: HYDREX™ MV 22, 36, 60
Code: HDXMV22, 490-110; HDXMV36, 490-111; HDXMV60, 490-112
Material uses: Hydrex MV 22, 36, 60 multi-grade hydraulic fluids are a premium hydraulic oils designed for use in hydraulic systems that are exposed to wider range of temperatures. It is specifically recommended for woodland, mining, construction, public utility and marine operations. Typically, Hydrex MV Oils are used in hydraulic systems, machine tools, hydraulic presses, rotary compressors, and centrifugal pumps.

Manufacturer: Petro-Canada Lubricants Inc.
2310 Lakeshore Road West
Mississauga, Ontario
Canada L5J 1K2

In case of emergency: Suncor Energy: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2. Hazards identification

Physical state: Viscous liquid.
Odour: Mild petroleum oil like.
WHMIS (Canada): Not controlled under WHMIS (Canada).
OSHA/HCS status: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.

Emergency overview: No specific hazard.
Routes of entry: Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation: No known significant effects or critical hazards.
Ingestion: No known significant effects or critical hazards.
Skin: Slightly irritating to the skin.
Eyes: Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects: No known significant effects or critical hazards.
Carcinogenicity: Not listed as carcinogenic by OSHA, NTP or IARC.
Mutagenicity: No known significant effects or critical hazards.
Teratogenicity: No known significant effects or critical hazards.
Developmental effects: No known significant effects or critical hazards.
Fertility effects: No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure: Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)
3. Composition/information on ingredients

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

The base oil may be a mixture of the following CAS#s: 8042-47-5, 64742-46-7, 64742-47-8, 64742-53-6, 64742-54-7, 64742-55-8, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, 178603-64-0, 178603-65-1, 178603-66-2, 445411-73-4

4. First-aid measures

Eye contact: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product: May be combustible at high temperature.

Extinguishing media: Use an extinguishing agent suitable for the surrounding fire.

Suitable: Carbon oxides (CO, CO2), calcium oxides (CaOx), phosphorus oxides (POx), sulphur oxides (SOx), zinc oxides (ZnOx), nitrogen oxides (NOx), aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards: Low fire hazard. This material must be heated before ignition will occur.

Special remarks on explosion hazards: Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.
6. Accidental release measures

**Personal precautions**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

**Environmental precautions**

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods for cleaning up**

**Small spill**

Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**

Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7. Handling and storage

**Handling**

Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Storage**

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure controls/personal protection

**Ingredient**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Exposure limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of severely hydrotreated and hydrocracked base oil (petroleum).</td>
<td>ACGIH TLV (United States). Notes: (Mineral oil) TWA: 5 mg/m³, (Inhalable fraction) 8 hour(s).</td>
</tr>
</tbody>
</table>

Consult local authorities for acceptable exposure limits.

**Recommended monitoring procedures**

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

**Engineering measures**

No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
8. Exposure controls/personal protection

<table>
<thead>
<tr>
<th>Hygiene measures</th>
<th>Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal protection</td>
<td></td>
</tr>
<tr>
<td>Respiratory</td>
<td>Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter</td>
</tr>
<tr>
<td>Hands</td>
<td>Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.</td>
</tr>
<tr>
<td>Eyes</td>
<td>Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.</td>
</tr>
<tr>
<td>Skin</td>
<td>Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.</td>
</tr>
<tr>
<td>Environmental exposure controls</td>
<td>Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.</td>
</tr>
</tbody>
</table>

9. Physical and chemical properties

| Physical state                      | Viscous liquid.                                                                 |
| Flash point                         | Open cup: ≥208°C (406.4°F) [Cleveland.]                                      |
| Auto-ignition temperature           | Not available.                                                                |
| Flammable limits                    | Not available.                                                                |
| Colour                              | Pale, straw-yellow. <br>**36:** Under special circumstances this product may contain blue dye. |
| Odour                               | Mild petroleum oil like.                                                      |
| Odour threshold                     | Not available.                                                                |
| pH                                  | Not available.                                                                |
| Boiling/condensation point          | Not available.                                                                |
| Melting/freezing point              | Not available.                                                                |
| Relative density                    | 0.842 to 0.8639 kg/L @ 15°C (59°F)                                            |
| Vapour pressure                     | Not available.                                                                |
| Vapour density                      | Not available.                                                                |
| Volatility                          | Not available.                                                                |
| Evaporation rate                    | Not available.                                                                |
| Viscosity                           | **22:** 23.8 cSt @ 40°C (104°F), 5.01 cSt @ 100°C (212°F), VI=168; <br>**36:** 32.25 cSt @ 40°C (104°F), 6.3 cSt @ 100°C (212°F), VI=148; <br>**60:** 58.0 cSt @ 40°C (104°F), 8.85 cSt @ 100°C (212°F), VI=130 |
| Pour point                          | **22:** -51°C (-60°F); <br>**36:** -48°C (-54°F); <br>**60:** -48°C (-54°F)  |
| Solubility                          | Insoluble in water.                                                          |
10. Stability and reactivity

Chemical stability: The product is stable.
Hazardous polymerisation: Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid: Reactive with oxidising agents, reducing agents and acids.
Hazardous decomposition products: May release COx, H2S, methacrylate monomers, aldehydes, alkyl mercaptans, sulfides, smoke and irritating vapours when heated to decomposition.

11. Toxicological information

Acute toxicity

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>Result</th>
<th>Species</th>
<th>Dose</th>
<th>Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of severely hydrotreated and hydrocracked base oil (petroleum).</td>
<td>LD50 Dermal</td>
<td>Rabbit</td>
<td>&gt;2000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LD50 Oral</td>
<td>Rat</td>
<td>&gt;5000 mg/kg</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>LC50 Inhalation</td>
<td>Rat</td>
<td>&gt;5.2 mg/l</td>
<td>4 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dusts and mists</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Conclusion/Summary: Not available.

Chronic toxicity: Not available.

Irritation/Corrosion: Not available.

Sensitiser: Not available.

Carcinogenicity: Not available.

Classification

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>EPA</th>
<th>NIOSH</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture of severely hydrotreated and hydrocracked base oil (petroleum).</td>
<td>A4</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
</tbody>
</table>

Mutagenicity: Not available.

Teratogenicity: Not available.

Reproductive toxicity: Not available.

12. Ecological information

Environmental effects: No known significant effects or critical hazards.

Aquatic ecotoxicity: Not available.

Biodegradability: Not available.

Other adverse effects: No known significant effects or critical hazards.
13. Disposal considerations

**Waste disposal**: The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14. Transport information

<table>
<thead>
<tr>
<th>Regulatory information</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Label</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>TDG Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>DOT Classification</td>
<td>Not regulated.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

PG*: Packing group

15. Regulatory information

**United States**

HCS Classification: Not regulated.

**Canada**

WHMIS (Canada): Not controlled under WHMIS (Canada).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

**International regulations**

Canada inventory: All components are listed or exempted.

United States inventory (TSCA 8b): All components are listed or exempted.

Europe inventory: All components are listed or exempted.

International lists:

- **Australia inventory (AICS)**: All components are listed or exempted.
- **China inventory (IECSC)**: All components are listed or exempted.
- **Japan inventory**: All components are listed or exempted.
- **Korea inventory**: All components are listed or exempted.
- **Philippines inventory (PICCS)**: All components are listed or exempted.

16. Other information

**Hazardous Material Information System (U.S.A.)**

- **Health**: 1
- **Flammability**: 1
- **Physical hazards**: 0
- **Personal protection**: B
16. Other information

National Fire Protection Association (U.S.A.):

Flammability:
- Health: 1
- Instability: 0
- Special:

References: Available upon request.

Date of printing: 5/20/2011.
Date of issue: 20 May 2011
Date of previous issue: 10/20/2010.

Responsible name: Product Safety - JDW

Indicates information that has changed from previously issued version.

For Copy of (M)SDS:
The Canadian Controlled Products Regulations (CPR) (Under the Hazardous Products Act, part of the WHMIS legislation) only apply to WHMIS Controlled (i.e., hazardous) products. Therefore, the CPR and the 3-year update rule specified therein do not apply to WHMIS Non-Controlled products. Although this is true, customarily Petro-Canada reviews and updates Non-Controlled product MSDS if a customer requests such an update. These Non-Controlled product updates are given a lower priority than Controlled products but are handled as soon as practicable. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:

Internet: lubricants.petro-canada.ca/msds

Lubricants:
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285

For Product Safety Information: (905) 804-4752

Notice to reader:

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.
# SAFETY DATA SHEET

## Section 1. Identification

**Product name**
Paradene AW 46

**SDS #**
459065

**Code**
459065-US12

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

**Product use**
Hydraulic fluid
For specific application advice see appropriate Technical Data Sheet or consult our company representative.

**Manufacturer**
Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563

**Supplier**
Castrol Industrial North America, Inc.
150 W. Warrenville Road
Naperville, IL 60563
Product Information: +1-877-641-1600

**EMERGENCY SPILL INFORMATION:**
1 (800) 424-9300 CHEMTREC (USA)

## Section 2. Hazards identification

**OSHA/HCS status**
This material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture**
Not classified.

**GHS label elements**

**Signal word**
No signal word.

**Hazard statements**
No known significant effects or critical hazards.

**Precautionary statements**

**Prevention**
Not applicable.

**Response**
Not applicable.

**Storage**
Not applicable.

**Disposal**
Not applicable.

**Hazards not otherwise classified**
Defatting to the skin.
Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency.
See 'Notes to physician' under First-Aid Measures, Section 4 of this Safety Data Sheet.

## Section 3. Composition/information on ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

## Product name
Paradene AW 46

## Product code
459065-US12

## Format
US

## Language
ENGLISH
Section 3. Composition/information on ingredients

Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact**
In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Check for and remove any contact lenses. Get medical attention.

**Skin contact**
Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.

**Inhalation**
If inhaled, remove to fresh air. Get medical attention if symptoms occur.

**Ingestion**
Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

**Protection of first-aiders**
No action shall be taken involving any personal risk or without suitable training.

### Most important symptoms/effects, acute and delayed

See Section 11 for more detailed information on health effects and symptoms.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician**
Treatment should in general be symptomatic and directed to relieving any effects.

Note: High Pressure Applications
Injections through the skin resulting from contact with the product at high pressure constitute a major medical emergency. Injuries may not appear serious at first but within a few hours tissue becomes swollen, discolored and extremely painful with extensive subcutaneous necrosis. Surgical exploration should be undertaken without delay. Thorough and extensive debridement of the wound and underlying tissue is necessary to minimize tissue loss and prevent or limit permanent damage. Note that high pressure may force the product considerable distances along tissue planes.

**Specific treatments**
No specific treatment.

Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media**
In case of fire, use foam, dry chemical or carbon dioxide extinguisher or spray.

**Unsuitable extinguishing media**
Do not use water jet.

### Specific hazards arising from the chemical

**Hazardous combustion products**
Combustion products may include the following:
- carbon dioxide
- carbon monoxide

### Special protective actions for fire-fighters

Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

### Special protective equipment for fire-fighters

Fire-fighters should wear positive pressure self-contained breathing apparatus (SCBA) and full turnout gear.
### Section 6. Accidental release measures

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

**For non-emergency personnel**

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment. Floors may be slippery; use care to avoid falling.

**For emergency responders**

If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions**

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

**Methods and materials for containment and cleaning up**

**Small spill**

Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

**Large spill**

Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor.

### Section 7. Handling and storage

**Precautions for safe handling**

**Protective measures**

Put on appropriate personal protective equipment (see Section 8).

**Advice on general occupational hygiene**

Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Wash thoroughly after handling. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

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

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Store and use only in equipment/containers designed for use with this product. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

### Section 8. Exposure controls/personal protection

**Control parameters**

**Occupational exposure limits**

This product does not have any assigned OELs.

**Appropriate engineering controls**

All activities involving chemicals should be assessed for their risks to health, to ensure exposures are adequately controlled. Personal protective equipment should only be considered after other forms of control measures (e.g. engineering controls) have been suitably evaluated. Personal protective equipment should conform to appropriate standards, be suitable for use, be kept in good condition and properly maintained. Your supplier of personal protective equipment should be consulted for advice on selection and appropriate standards. For further information contact your national organisation for standards. Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits. The final choice of protective equipment will depend upon a risk assessment. It is important to ensure that all items of personal protective equipment are compatible.
Section 8. Exposure controls/personal protection

Environmental exposure controls
Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures
Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection
Safety glasses with side shields.

Skin protection
Hand protection
Wear protective gloves if prolonged or repeated contact is likely. Wear chemical resistant gloves. Recommended: Nitrile gloves. The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures). Most gloves provide only a short time of protection before they must be discarded and replaced. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions. Consult your supervisor or Standard Operating Procedure (S.O.P) for special handling instructions.

Body protection
Use of protective clothing is good industrial practice. Cotton or polyester/cotton overalls will only provide protection against light superficial contamination that will not soak through to the skin. Overalls should be laundered on a regular basis. When the risk of skin exposure is high (e.g. when cleaning up spillages or if there is a risk of splashing) then chemical resistant aprons and/or impervious chemical suits and boots will be required. Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection
Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection
In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Section 9. Physical and chemical properties

Appearance
Physical state
Liquid.
Color
Brown. [Light]
Odor
Not available.
Odor threshold
Not available.
\( p_H \)
Not available.
Melting point
Not available.
Boiling point
Not available.
Flash point
Closed cup: >232°C (>449.6°F) [Pensky-Martens.] [Product does not sustain combustion.]
Evaporation rate
Not available.
Flammability (solid, gas)
Not applicable. Based on - Physical state
Lower and upper explosive (flammable) limits
Not available.
Section 9. Physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapor pressure</td>
<td>Not available.</td>
</tr>
<tr>
<td>Vapor density</td>
<td>Not available.</td>
</tr>
<tr>
<td>Density</td>
<td>(&lt;1000 \text{ kg/m}^3 \ (&lt;1 \text{ g/cm}^3) ) at 15^\circ\text{C})</td>
</tr>
<tr>
<td>Solubility</td>
<td>insoluble in water.</td>
</tr>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>Not available.</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available.</td>
</tr>
</tbody>
</table>
| Viscosity                       | Kinematic: 46.6 mm$^2$/s (46.6 cSt) at 40\(^\circ\text{C}\)  
                                  | Kinematic: 6.96 mm$^2$/s (6.96 cSt) at 100\(^\circ\text{C}\)             |

Section 10. Stability and reactivity

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reactivity</td>
<td>No specific test data available for this product. Refer to Conditions to avoid and</td>
</tr>
<tr>
<td></td>
<td>Incompatible materials for additional information.</td>
</tr>
<tr>
<td>Chemical stability</td>
<td>The product is stable.</td>
</tr>
<tr>
<td>Possibility of hazardous</td>
<td>Under normal conditions of storage and use, hazardous reactions will not occur.</td>
</tr>
<tr>
<td>reactions</td>
<td>Under normal conditions of storage and use, hazardous polymerization will not occur.</td>
</tr>
<tr>
<td>Conditions to avoid</td>
<td>Avoid all possible sources of ignition (spark or flame).</td>
</tr>
<tr>
<td>Incompatible materials</td>
<td>Reactive or incompatible with the following materials: oxidizing materials.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Under normal conditions of storage and use, hazardous decomposition products should</td>
</tr>
<tr>
<td></td>
<td>not be produced.</td>
</tr>
</tbody>
</table>

Section 11. Toxicological information

<table>
<thead>
<tr>
<th>Information on toxicological effects</th>
<th>Routes of entry anticipated: Dermal, Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information on the likely routes of exposure</td>
<td>Routes of entry anticipated: Dermal, Inhalation.</td>
</tr>
<tr>
<td>Potential acute health effects</td>
<td>Routes of entry anticipated: Dermal, Inhalation.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Skin contact</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Inhalation</td>
<td>Vapor inhalation under ambient conditions is not normally a problem due to low vapor pressure.</td>
</tr>
<tr>
<td>Ingestion</td>
<td>No known significant effects or critical hazards.</td>
</tr>
<tr>
<td>Symptoms related to the physical, chemical and toxicological characteristics</td>
<td>Routes of entry anticipated: Dermal, Inhalation.</td>
</tr>
<tr>
<td>Eye contact</td>
<td>No specific data.</td>
</tr>
</tbody>
</table>
| Skin contact                        | Adverse symptoms may include the following: \  
                                  | irritation \  
                                  | dryness \  
                                  | cracking \  
                                  | \  
                                  | \  
                                  | | Inhalation | No specific data. |
| Ingestion                           | No specific data. |

<table>
<thead>
<tr>
<th>Delayed and immediate effects and also chronic effects from short and long term exposure</th>
<th>Routes of entry anticipated: Dermal, Inhalation.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short term exposure</td>
<td>Routes of entry anticipated: Dermal, Inhalation.</td>
</tr>
<tr>
<td>Potential immediate effects</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

Product name: Paradene AW 46
Product code: 459065-US12
Language: ENGLISH
Format: US
Version: 2
Date of issue: 09/15/2014
Section 11. Toxicological information

Potential delayed effects Not available.
Long term exposure Not available.
Potential immediate effects Not available.
Potential delayed effects Not available.

Potential chronic health effects
General No known significant effects or critical hazards.
Carcinogenicity No known significant effects or critical hazards.
Mutagenicity No known significant effects or critical hazards.
Teratogenicity No known significant effects or critical hazards.
Developmental effects No known significant effects or critical hazards.
Fertility effects No known significant effects or critical hazards.

Numerical measures of toxicity
Acute toxicity estimates Not available.

Section 12. Ecological information

Toxicity
No testing has been performed by the manufacturer.

Persistence and degradability
Expected to be biodegradable.

Bioaccumulative potential
This product is not expected to bioaccumulate through food chains in the environment.

Mobility in soil
Soil/water partition coefficient ($K_{OC}$) Not available.
Mobility Spillages may penetrate the soil causing ground water contamination.

Other adverse effects No known significant effects or critical hazards.
Other ecological information Spills may form a film on water surfaces causing physical damage to organisms. Oxygen transfer could also be impaired.

Section 13. Disposal considerations

Disposal methods The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Section 14. Transport information

<table>
<thead>
<tr>
<th>UN number</th>
<th>DOT Classification</th>
<th>TDG Classification</th>
<th>IMDG</th>
<th>IATA</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN proper shipping name</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Transport hazard class(es)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Packing group</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental hazards</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
<td>No.</td>
</tr>
<tr>
<td>Additional information</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Special precautions for user Not available.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

Section 15. Regulatory information

U.S. Federal regulations

United States inventory (TSCA 8b) All components are listed or exempted.
SARA 302/304
Composition/information on ingredients
No products were found.
SARA 311/312
Classification Not applicable.
SARA 313
Form R - Reporting requirements This product does not contain any hazardous ingredients at or above regulated thresholds.
Supplier notification This product does not contain any hazardous ingredients at or above regulated thresholds.
State regulations
Massachusetts The following components are listed: MINERAL OIL, PETROLEUM DISTILLATES, HYDROTREATED LIGHT PARAFFINIC
New Jersey The following components are listed: MINERAL OIL (UNTREATED and MILDLY TREATED); MINERAL OIL (UNTREATED and MILDLY TREATED)
Pennsylvania None of the components are listed.
California Prop. 65 WARNING: This product contains a chemical known to the State of California to cause cancer. Ethyl acrylate
Other regulations
Australia inventory (AICS) All components are listed or exempted.
Canada inventory All components are listed or exempted.
China inventory (IECSC) All components are listed or exempted.
Japan inventory (ENCS) At least one component is not listed.

Version 2 Date of issue 09/15/2014 Format US Language ENGLISH
Section 15. Regulatory information

Korea inventory (KECI)  
All components are listed or exempted.

Philippines inventory  
(PICCS)  
All components are listed or exempted.

REACH Status  
For the REACH status of this product please consult your company contact, as identified in Section 1.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

- Health: 1
- Flammability: 1
- Physical hazards: 0
- Personal protection: X

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

National Fire Protection Association (U.S.A.)

- Health: 1
- Flammability: 1
- Instability/Reactivity: 0
- Special: X

History

Date of issue/Date of revision 09/15/2014.

Date of previous issue 04/29/2014.

Key to abbreviations

- ACGIH = American Conference of Industrial Hygienists
- ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- CAS Number = Chemical Abstracts Service Registry Number
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- OEL = Occupational Exposure Limit
- SDS = Safety Data Sheet
- STEL = Short term exposure limit
- TWA = Time weighted average
- UN = United Nations
- UN Number = United Nations Number, a four digit number assigned by the United Nations Committee of Experts on the Transport of Dangerous Goods.

Indicates information that has changed from previously issued version.

Notice to reader

All reasonably practicable steps have been taken to ensure this data sheet and the health, safety and environmental information contained in it is accurate as of the date specified below. No warranty or representation, express or implied is made as to the accuracy or completeness of the data and information in this data sheet.

The data and advice given apply when the product is sold for the stated application or applications. You should not use the product other than for the stated application or applications without seeking advice from BP Group.

It is the user’s obligation to evaluate and use this product safely and to comply with all applicable laws and regulations. The BP Group shall not be responsible for any damage or injury resulting from use, other than the stated product use of the material, from any failure to adhere to recommendations, or from any hazards inherent in the nature of the material.
Section 16. Other information

Purchasers of the product for supply to a third party for use at work, have a duty to take all necessary steps to ensure that any person handling or using the product is provided with the information in this sheet. Employers have a duty to tell employees and others who may be affected of any hazards described in this sheet and of any precautions that should be taken. You can contact the BP Group to ensure that this document is the most current available. Alteration of this document is strictly prohibited.