SAFETY DATA SHEET

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product information
Product Name: PA-18
Material: 1112683, 1112684, 1112290, 1110870, 1073622, 1073620, 1073623, 1074099, 1074092, 1073613, 1074100, 1073609, 1074101, 1073607, 1074223, 1073641, 1073629, 1073631, 1073633, 1073634, 1073635, 1073636, 1073602, 1073638, 1074803, 1073640, 1073625, 1073941, 1073628, 1073627, 1073626, 1073637, 1074093, 1074094, 1073624, 1073942, 1073639, 1074789, 1074823, 1074824, 1074825, 1074822, 1074791, 1074790, 1037088, 1037087

Use: Chemical intermediate

Company: Chevron Phillips Chemical Company LP
Specialty Chemicals
10001 Six Pines Drive
The Woodlands, TX 77380

Emergency telephone:

Health:
866.442.9628 (North America)
1.832.813.4984 (International)

Transport:
CHEMTREC 800.424.9300 or 703.527.3887(int'l)
Asia: CHEMWATCH (+612 9186 1132) China: 0532 8388 9090
EUROPE: BIG +32.14.584545 (phone) or +32.14583516 (telefax)
Mexico CHEMTREC 01-800-681-9531 (24 hours)
South America SOS-Cotec Inside Brazil: 0800.111.767 Outside Brazil: +55.19.3467.1600
Argentina: +(54)-1159839431

Responsible Department: Product Safety and Toxicology Group
E-mail address: SDS@CPChem.com
Website: www.CPChem.com

SECTION 2: Hazards identification

Classification of the substance or mixture
This product has been classified in accordance with the hazard communication standard 29 CFR 1910.1200; the SDS and labels contain all the information as required by the standard.

SDS Number:100000014137
Classification: Combustible dust

Labeling

Signal Word: Warning

Hazard Statements: May form combustible dust concentrations in air.

Carcinogenicity:

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

ACGIH: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

SECTION 3: Composition/information on ingredients

Synonyms:
- Octadecene-1 polymer with 2,5-Furandione
- PA-18, HV Commercial Grade
- PA-18, HV Low Color Grade
- PA-18, LV Low Color
- PA-18, LV Commercial Grade
- Maleic anhydride/octadecene copolymer
- Poly(maleic anhydride-alt-1-octadecene)
- Octadecene/MA copolymer

Molecular formula: \((\text{C}_{18}\text{H}_{36}\text{C}_{4}\text{H}_{2}\text{O}_{3})_x\)

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,5-Furandione, polymer with 1-octadecene</td>
<td>25266-02-8</td>
<td>100</td>
</tr>
</tbody>
</table>

SECTION 4: First aid measures

General advice: Do not leave the victim unattended.

If inhaled: If unconscious, place in recovery position and seek medical advice. If symptoms persist, call a physician.

In case of eye contact: Remove contact lenses. Protect unharmed eye. If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
person. If symptoms persist, call a physician.

SECTION 5: Firefighting measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Autoignition temperature</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Special protective equipment for fire-fighters</td>
<td>Wear self-contained breathing apparatus for firefighting if necessary.</td>
</tr>
<tr>
<td>Further information</td>
<td>Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.</td>
</tr>
<tr>
<td>Fire and explosion protection</td>
<td>Provide appropriate exhaust ventilation at places where dust is formed.</td>
</tr>
<tr>
<td>Hazardous decomposition products</td>
<td>Carbon oxides.</td>
</tr>
</tbody>
</table>

SECTION 6: Accidental release measures

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal precautions</td>
<td>Avoid dust formation.</td>
</tr>
<tr>
<td>Methods for cleaning up</td>
<td>Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.</td>
</tr>
</tbody>
</table>

SECTION 7: Handling and storage

Handling

Advice on safe handling: Avoid formation of respirable particles. Avoid dust accumulation in enclosed space. Do not breathe vapors/dust. Smoking, eating and drinking should be prohibited in the application area. Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary, but may not by themselves be sufficient.

Advice on protection against fire and explosion: Provide appropriate exhaust ventilation at places where dust is formed.

Storage

Requirements for storage areas and containers: Electrical installations / working materials must comply with the technological safety standards.

Advice on common storage: No materials to be especially mentioned.

Use: Chemical intermediate
SECTION 8: Exposure controls/personal protection

Engineering measures

Consider the potential hazards of this material (see Section 2), applicable exposure limits, job activities, and other substances in the workplace when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

Personal protective equipment

Respiratory protection: No respiratory protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.

Hand protection: 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. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection: Safety glasses.

Skin and body protection: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific workplace. Wear as appropriate: Lightweight protective clothing.

Hygiene measures: General industrial hygiene practice.

SECTION 9: Physical and chemical properties

Information on basic physical and chemical properties

Appearance
Form: Powder
Physical state: Solid
Color: white to yellow

Safety data
Flash point: No data available
Lower explosion limit: No data available
Upper explosion limit: No data available
Oxidizing properties: no
Autoignition temperature: Not applicable
Molecular formula: (C18H36-C4H2O3)x
Molecular weight: No data available
SECTION 10: Stability and reactivity

Chemical stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Possibility of hazardous reactions

Hazardous reactions: Hazardous polymerization does not occur.

Further information: No hazards to be specially mentioned.

Hazardous reactions: Dust may form explosive mixture in air.

Conditions to avoid: Generation of Dusts.

Materials to avoid: Avoid contact with strong oxidizing agents.

Hazardous decomposition products: Carbon oxides

Other data: Keep in a dry place.

No decomposition if stored and applied as directed.
SECTION 11: Toxicological information

Acute oral toxicity
2,5-Furandione, polymer with 1-octadecene : LD50: > 8,000 mg/kg
Species: Rat

Acute inhalation toxicity
2,5-Furandione, polymer with 1-octadecene : No data available

Acute dermal toxicity
2,5-Furandione, polymer with 1-octadecene : LD50: > 2,000 mg/kg
Species: Rat
Method: OECD Test Guideline 402

Skin irritation
2,5-Furandione, polymer with 1-octadecene : No skin irritation

Eye irritation
2,5-Furandione, polymer with 1-octadecene : No eye irritation

Repeated dose toxicity
2,5-Furandione, polymer with 1-octadecene : Species: Rat
Application Route: oral gavage
Dose: 0, 100, 500, 1000 mg/kg
Exposure time: 4 wk
Number of exposures: daily
NOEL: > 1,000 mg/kg
Species: Rat
Application Route: oral gavage
Dose: 0, 250 mg/kg
Exposure time: 13 wk
Number of exposures: daily
NOEL: > 250 mg/kg

Genotoxicity in vitro
2,5-Furandione, polymer with 1-octadecene : Test Type: Ames test
Result: negative

PA-18
Further information : The product contains no substances which at their given concentration, are considered to be hazardous to health.

SECTION 12: Ecological information

Toxicity to fish
2,5-Furandione, polymer with 1-octadecene: LC50: > 1,000 mg/l
Exposure time: 96 h
Species: Scophthalmus maximus (Flatfish, Flounder)
semi-static test

Toxicity to daphnia and other aquatic invertebrates

2,5-Furandione, polymer with 1-octadecene: > 2,000 mg/l
Exposure time: 48 h
Species: Acartia tonsa (Marine Copepod)
static test Method: ISO 14669 and PARCOM method

Toxicity to algae

2,5-Furandione, polymer with 1-octadecene: EL50: > 1,000 mg/l
Exposure time: 72 h
Species: Skeletonema costatum (Marine Algae)
static test

Biodegradability

2,5-Furandione, polymer with 1-octadecene: This material is not expected to be readily biodegradable.

Bioaccumulation

2,5-Furandione, polymer with 1-octadecene: The polymer is too large to be bioavailable.
Accumulation in aquatic organisms is unlikely.

Mobility

2,5-Furandione, polymer with 1-octadecene: immobile

Additional ecological information: This material is not expected to be harmful to aquatic organisms.

Ecotoxicology Assessment

Short-term (acute) aquatic hazard
2,5-Furandione, polymer with 1-octadecene: This product has no known ecotoxicological effects.

Long-term (chronic) aquatic hazard
2,5-Furandione, polymer with 1-octadecene: This product has no known ecotoxicological effects.

SECTION 13: Disposal considerations

The information in this SDS pertains only to the product as shipped.

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.
SECTION 14: Transport information

The shipping descriptions shown here are for bulk shipments only, and may not apply to shipments in non-bulk packages (see regulatory definition).

Consult the appropriate domestic or international mode-specific and quantity-specific Dangerous Goods Regulations for additional shipping description requirements (e.g., technical name or names, etc.) Therefore, the information shown here, may not always agree with the bill of lading shipping description for the material. Flashpoints for the material may vary slightly between the SDS and the bill of lading.

US DOT (UNITED STATES DEPARTMENT OF TRANSPORTATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IMO / IMDG (INTERNATIONAL MARITIME DANGEROUS GOODS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

IATA (INTERNATIONAL AIR TRANSPORT ASSOCIATION)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADR (AGREEMENT ON DANGEROUS GOODS BY ROAD (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

RID (REGULATIONS CONCERNING THE INTERNATIONAL TRANSPORT OF DANGEROUS GOODS (EUROPE))
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

ADN (EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY INLAND WATERWAYS)
NOT REGULATED AS A HAZARDOUS MATERIAL OR DANGEROUS GOODS FOR TRANSPORTATION BY THIS AGENCY.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

National legislation
SARA 311/312 Hazards: Combustible dust

CERCLA Reportable Quantity: This material does not contain any components with a CERCLA RQ.

SARA 302 Reportable Quantity: This material does not contain any components with a SARA 302 RQ.

SARA 302 Threshold Planning Quantity: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 304 Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 313 Components: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App. A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

US State Regulations

Pennsylvania Right To Know: No components are subject to the Pennsylvania Right to Know Act.

New Jersey Right To Know
### Notification status

**Europe  REACH**
- A substance or substances in this product is not registered or notified to be registered. Importation or manufacture of this product is still permitted provided that it does not exceed the REACH minimum threshold quantity of the non-regulated substances.

**Switzerland  CH INV**
- On the inventory, or in compliance with the inventory

**United States of America (USA)  TSCA**
- On or in compliance with the active portion of the TSCA inventory

**Canada  DSL**
- All components of this product are on the Canadian DSL

**Australia  AICS**
- On the inventory, or in compliance with the inventory

**New Zealand  NZIoC**
- Not in compliance with the inventory

**Japan  ENCS**
- On the inventory, or in compliance with the inventory

**Korea  KECI**
- A substance(s) in this product was not registered, notified to be registered, or exempted from registration by CPChem according to K-REACH regulations. Importation or manufacture of this product is still permitted provided the Korean Importer of Record has themselves notified the substance.

**Philippines  PICCS**
- On the inventory, or in compliance with the inventory

**China  IECSC**
- On the inventory, or in compliance with the inventory

**Taiwan  TCSI**
- On the inventory, or in compliance with the inventory

### SECTION 16: Other information

**NFPA Classification**
- Health Hazard: 0
- Fire Hazard: 2
- Reactivity Hazard: 0

**Further information**

Legacy SDS Number : PE0090

Significant changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information in this SDS pertains only to the product as shipped.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a
guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Key or legend to abbreviations and acronyms used in the safety data sheet

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACGIH</td>
<td>American Conference of Government Industrial Hygienists</td>
</tr>
<tr>
<td>LD50</td>
<td>Lethal Dose 50%</td>
</tr>
<tr>
<td>AICS</td>
<td>Australia, Inventory of Chemical Substances</td>
</tr>
<tr>
<td>LOAEL</td>
<td>Lowest Observed Adverse Effect Level</td>
</tr>
<tr>
<td>DSL</td>
<td>Canada, Domestic Substances List</td>
</tr>
<tr>
<td>NFPA</td>
<td>National Fire Protection Agency</td>
</tr>
<tr>
<td>NDSL</td>
<td>Canada, Non-Domestic Substances List</td>
</tr>
<tr>
<td>NIOSH</td>
<td>National Institute for Occupational Safety &amp; Health</td>
</tr>
<tr>
<td>CNS</td>
<td>Central Nervous System</td>
</tr>
<tr>
<td>NTP</td>
<td>National Toxicology Program</td>
</tr>
<tr>
<td>CAS</td>
<td>Chemical Abstract Service</td>
</tr>
<tr>
<td>NZIoC</td>
<td>New Zealand Inventory of Chemicals</td>
</tr>
<tr>
<td>EC50</td>
<td>Effective Concentration</td>
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<tr>
<td>NOAEL</td>
<td>No Observable Adverse Effect Level</td>
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<tr>
<td>EG50</td>
<td>Effective Concentration 50%</td>
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<td>NOEC</td>
<td>No Observed Effect Concentration</td>
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<td>EOSCA</td>
<td>European Oilfield Specialty Chemicals Association</td>
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<tr>
<td>PEL</td>
<td>Permissible Exposure Limit</td>
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<tr>
<td>EINECS</td>
<td>European Inventory of Existing Chemical Substances</td>
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<tr>
<td>PICCS</td>
<td>Philippines Inventory of Commercial Chemical Substances</td>
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<tr>
<td>MAK</td>
<td>Germany Maximum Concentration Values</td>
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<tr>
<td>PRNT</td>
<td>Presumed Not Toxic</td>
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<tr>
<td>GHS</td>
<td>Globally Harmonized System</td>
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<tr>
<td>RCRA</td>
<td>Resource Conservation Recovery Act</td>
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<tr>
<td>&gt;=</td>
<td>Greater Than or Equal To</td>
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<tr>
<td>STEL</td>
<td>Short-term Exposure Limit</td>
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<td>IC50</td>
<td>Inhibition Concentration 50%</td>
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<tr>
<td>SARA</td>
<td>Superfund Amendments and Reauthorization Act.</td>
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<tr>
<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<tr>
<td>TLV</td>
<td>Threshold Limit Value</td>
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<tr>
<td>IECSC</td>
<td>Inventory of Existing Chemical Substances in China</td>
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<td>Japan, Inventory of Existing and New Chemical Substances</td>
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<td>Toxic Substance Control Act</td>
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<td>KECI</td>
<td>Korea, Existing Chemical Inventory</td>
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<tr>
<td>UVCB</td>
<td>Unknown or Variable Composition, Complex Reaction Products, and Biological Materials</td>
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<tr>
<td>&lt;=</td>
<td>Less Than or Equal To</td>
</tr>
<tr>
<td>WHMIS</td>
<td>Workplace Hazardous Materials Information System</td>
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<tr>
<td>LC50</td>
<td>Lethal Concentration 50%</td>
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</tbody>
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