

# **AVALON® 90 AHT DP**

Version Revision Date: SDS Number: Date of last issue: -

1.0 2016/09/22 400001012171 Date of first issue: 2016/09/22

#### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : AVALON® 90 AHT DP

Chemical nature : -

### Manufacturer or supplier's details

Company : Huntsman (Taiwan) Ltd.

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India: + 91 22 42 87 5333 Australia: 1 800 786 152 New Zealand: 0 800 767 437

#### Recommended use of the chemical and restrictions on use

Recommended use : Manufacture of plastics products

Restrictions on use : For industrial use only.

#### 2. HAZARDS IDENTIFICATION

#### **GHS Classification**

Chronic aquatic toxicity : Category 3

**GHS label elements** 

Hazard pictograms : None

Signal word : None

Hazard statements : H412 Harmful to aquatic life with long lasting effects.

Precautionary statements : **Prevention**:

P273 Avoid release to the environment.

Storage:

Store in accordance with all local, regional, national and

international regulations.

Disposal:

P501 Dispose of contents and container in accordance with all



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local, regional, national and international regulations.

#### Other hazards which do not result in classification

None known.

#### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### **Hazardous components**

Chemical Name	CAS-No.	Concentration (% w/w)
bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-	63843-89-0	0.1 - 1
bis(1,1-dimethylethyl)-4-		
hydroxyphenyl]methyl]butylmalonate		
3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-	26741-53-7	0.1 - 1
tetraoxa-3,9-diphosphaspiro[5.5]undecane		

#### 4. FIRST AID MEASURES

General advice : Move out of dangerous area.

Consult a physician.

Show this safety data sheet to the doctor in attendance.

# First aid measures for different exposure routes

If inhaled : Move to fresh air in case of accidental inhalation of dust or

fumes from overheating or combustion.

If breathing is irregular or stopped, administer artificial

respiration.

If unconscious place in recovery position and seek medical

advice.

If symptoms persist, call a physician.

In case of skin contact : Take off contaminated clothing and shoes immediately.

Wash off with soap and plenty of water.

In case of eye contact : Flush eyes with water as a precaution.

Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

Do not induce vomiting without medical advice.

If a person vomits when lying on his back, place him in the

recovery position.

Obtain medical attention.

Most important symptoms and effects, both acute and

: None known.



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delayed

Notes to physician : Keep under medical supervision for at least 48 hours.

#### 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Use extinguishing measures that are appropriate to local

circumstances and the surrounding environment.

Unsuitable extinguishing

media

: No data is available on the product itself.

Specific hazards during

firefighting

: Do not allow run-off from fire fighting to enter drains or water

courses.

Hazardous combustion

products

 Carbon monoxide Carbon dioxide (CO2) Nitrogen oxides (NOx)

Specific extinguishing

methods

: Standard procedure for chemical fires.

Collect contaminated fire extinguishing water separately. This

must not be discharged into drains.

Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

Special protective equipment

for firefighters

: In the event of fire, wear self-contained breathing apparatus.

#### 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures : Avoid dust formation.

Evacuate personnel to safe areas.

Keep people away from and upwind of spill/leak.

Ensure adequate ventilation.

Use personal protective equipment.

Only qualified personnel equipped with suitable protective

equipment may intervene.

Never return spills in original containers for re-use.

Treat recovered material as described in the section "Disposal

considerations".

For disposal considerations see section 13.

Environmental precautions : Try to prevent the material from entering drains or water

courses.

If the product contaminates rivers and lakes or drains inform

respective authorities.

Methods and materials for containment and cleaning up

: Sweep up or vacuum up spillage and collect in suitable

container for disposal.

Pick up and arrange disposal without creating dust.



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Keep in suitable, closed containers for disposal.

#### 7. HANDLING AND STORAGE

Handling

Technical measures : Ensure that eyewash stations and safety showers are close to

the workstation location.

Local/Total ventilation : Ensure adequate ventilation.

Advice on protection against

fire and explosion

: Avoid dust formation. Provide appropriate exhaust ventilation

at places where dust is formed.

Advice on safe handling : For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the

application area.

Dispose of rinse water in accordance with local and national

regulations.

**Storage** 

Conditions for safe storage : Store in original container.

Keep container tightly closed in a dry and well-ventilated

place.

Containers which are opened must be carefully resealed and

kept upright to prevent leakage.

Materials to avoid : No special restrictions on storage with other products.

Storage period : 12 Months

#### 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection : 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.

Hand protection

Remarks : Polyvinyl alcohol or nitrile- butyl-rubber gloves

The selected protective gloves have to satisfy the

specifications of EU Directive 89/686/EEC and the standard

EN 374 derived from it.

Before removing gloves clean them with soap and water.

Eye protection : Eye wash bottle with pure water

Tightly fitting safety goggles



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Skin and body protection : Choose body protection according to the amount and

concentration of the dangerous substance at the work place.

Protective measures : Ensure that eye flushing systems and safety showers are

located close to the working place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety

practice.

When using do not eat or drink.

Wash hands before breaks and at the end of workday.

#### 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : solid

Colour : No data available

Odour : No data available

Odour Threshold : No data available

pH : No data available

Melting point/freezing point : No data available

Boiling point/boiling range : No data available

Flash point : Method: closed cup

Not applicable

Evaporation rate : No data available

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit : No data available

Lower explosion limit : No data available

Vapour pressure : No data available

Relative vapour density : No data available

Relative density : 1.19 - 1.23

Density : No data available

Bulk density : No data available

Solubility(ies)

Water solubility : No data available

Solubility in other solvents : No data is available on the product itself.



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: No data available

Partition coefficient: n-

octanol/water

: No data is available on the product itself.

: No data is available on the product itself.

Auto-ignition temperature : not determined

Decomposition temperature

Self-Accelerating

decomposition temperature

(SADT) Viscosity

> Viscosity, dynamic : No data available

> Viscosity, kinematic : No data available

Explosive properties : Not applicable

: No data available Oxidizing properties

### 10. STABILITY AND REACTIVITY

Reactivity : Stable under recommended storage conditions. No decomposition if stored and applied as directed. Chemical stability No hazards to be specially mentioned.

Possibility of hazardous

Conditions to avoid

reactions

: No data available

Incompatible materials : No data available

Hazardous decomposition

products

: Stable under normal conditions.

### 11. TOXICOLOGICAL INFORMATION

Exposure routes : No data is available on the product itself.

Symptoms of Overexposure : None known.

# **Acute toxicity**

# Components:

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Acute oral : LD50 (Rat): 1,490 mg/kg

toxicityComponents Method: OECD Test Guideline 401

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

: LD50 (Rat): > 5,000 mg/kg Acute oral

Method: OECD Test Guideline 401 toxicityComponents

#### Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Acute inhalation toxicity : LC50 (Rat, male and female): > 2 mg/l

Exposure time: 1 h



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Method: OECD Test Guideline 403

Assessment: The substance or mixture has no acute

inhalation toxicity

# Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Acute dermal toxicity : LD50 (Rabbit): > 2,000 mg/kg

Method: OECD Test Guideline 402

Acute toxicity (other routes of : No data available

administration)

#### Skin corrosion/irritation

#### **Components:**

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Species: Rabbit

Assessment: No skin irritation Method: OECD Test Guideline 404

Result: No skin irritation

#### Serious eye damage/eye irritation

#### **Components:**

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Species: Rabbit

Result: No eye irritation Assessment: No eye irritation Method: OECD Test Guideline 405

### Respiratory or skin sensitisation

#### Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Exposure routes: Skin Species: Guinea pig

Method: OECD Test Guideline 406 Result: Does not cause skin sensitisation.

No data available Assessment:

### Chronic toxicity

### Germ cell mutagenicity

#### **Components:**

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Genotoxicity in vitro : Metabolic activation: with and without metabolic activation

Result: negative

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 473



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Result: negative

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Genotoxicity in vitro : Method: OECD Test Guideline 471

Result: negative

Method: OECD Test Guideline 476

Result: negative

Method: OECD Test Guideline 473

Result: negative

### Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Genotoxicity in vivo : Application Route: Intraperitoneal injection

Exposure time: 48 h Dose: 2000 mg/kg

Method: OECD Test Guideline 474

Result: negative

### Carcinogenicity

No data available

Carcinogenicity -

: No data available

Assessment

### Reproductive toxicity

#### **Components:**

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Effects on fertility : Species: Rat, male and female

**Application Route: Oral** 

Method: OECD Test Guideline 422

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Species: Rat, male and female

Application Route: Oral

Method: OECD Test Guideline 415

### **Components:**

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Effects on foetal : Species: No information available. development : Application Route: No data available

Method: OECD Test Guideline 422 Result: No teratogenic effects

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Species: Rabbit



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Application Route: Oral

General Toxicity Maternal: No observed adverse effect level:

200 mg/kg body weight

Method: OECD Test Guideline 414 Result: No teratogenic effects

Reproductive toxicity -

Assessment

: No data available

### STOT - single exposure

No data available

### STOT - repeated exposure

No data available

### Repeated dose toxicity

#### Components:

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Species: Rat, male and female

NOAEL: 2 mg/kg/d

Application Route: Ingestion Exposure time: 672 h Number of exposures: 7 d Method: Subacute toxicity

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Species: Rat, male and female NOAEL: 55 - 71 mg/kg/d Application Route: Ingestion Exposure time: 2,160 h Number of exposures: 7 d Method: Subchronic toxicity

Repeated dose toxicity -

Assessment

: No data available

### **Aspiration toxicity**

No data available

#### **Experience with human exposure**

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available



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Ingestion: No data available

#### Toxicology, Metabolism, Distribution

No data available

# **Neurological effects**

No data available

#### **Further information**

**Product:** 

Remarks: No data available

### 12. ECOLOGICAL INFORMATION

#### **Ecotoxicity**

### **Components:**

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane: Toxicity to fish : LC50 (Brachydanio rerio (zebrafish)): 70.7 mg/l

Exposure time: 96 h
Test Type: static test
Test substance: Fresh water
Method: OECD Test Guideline 203

Toxicity to daphnia and other

aquatic invertebrates

: No data available

#### **Components:**

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane: Toxicity to algae : EC50 (Desmodesmus subspicatus (Scenedesmus

subspicatus)): 97 mg/l Exposure time: 72 h

Test substance: Marine water Method: OECD Test Guideline 201

# **Components:**

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate: M-Factor (Acute aquatic : 10

toxicity)

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

M-Factor (Acute aquatic : 1

toxicity)

#### Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane: Toxicity to fish (Chronic : NOEC (Brachydanio rerio (zebrafish)): 50 mg/l

toxicity) Exposure time: 96 hrs



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Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 203

#### Components:

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.002 mg/l

aquatic invertebrates (Chronic toxicity)

Exposure time: 21 d

Test Type: semi-static test Test substance: Fresh water

Method: OECD Test Guideline 211

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5,5]undecane:

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.1 mg/l Exposure time: 21 d

aquatic invertebrates (Chronic toxicity)

Test Type: semi-static test Test substance: Fresh water

Method: OECD Test Guideline 211

M-Factor (Chronic aquatic

toxicity)

: No data available

### Components:

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Toxicity to bacteria : EC50: > 1,000 mg/l

Exposure time: 3 h Test Type: static test

Test substance: Fresh water Method: OECD Test Guideline 209

Toxicity to soil dwelling

organisms

: No data available

: No data available Plant toxicity

Sediment toxicity : No data available

Toxicity to terrestrial

organisms

: No data available

Ecotoxicology Assessment

Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to

the environment

: No data available

Further information: No data available



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### Persistence and degradability

#### **Components:**

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Biodegradability : Result: Not readily biodegradable.

Biodegradation: 1 - 2 % Exposure time: 28 d

Method: OECD Test Guideline 301B

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Biodegradability : Inoculum: activated sludge

Concentration: 31 mg/l

Result: Not readily biodegradable.

Biodegradation: < 10 % Exposure time: 28 d

Biochemical Oxygen

Demand (BOD)

: No data available

Chemical Oxygen Demand

(COD)

: No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon

(DOC)

: No data available

Physico-chemical

removability

: No data available

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage

Treatment

: No data available

### **Bioaccumulative potential**

#### Components:

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Bioaccumulation : Species: Cyprinus carpio (Carp)

Bioconcentration factor (BCF): 24.3 - 437.1

Exposure time: 60 d Test substance: Fresh water Method: flow-through test

Remarks: Bioaccumulation is unlikely.

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:



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Bioaccumulation : Bioconcentration factor (BCF): 164

**Components:** 

bis(1,2,2,6,6-pentamethyl-4-piperidyl) [[3,5-bis(1,1-dimethylethyl)-4-

hydroxyphenyl]methyl]butylmalonate:

Partition coefficient: n- : log Pow: 3.7 (23 °C)

octanol/water pH: 6

Method: OECD Test Guideline 107

3,9-bis(2,4-di-tert-butylphenoxy)-2,4,8,10-tetraoxa-3,9-diphosphaspiro[5.5]undecane:

Partition coefficient: n-

: log Pow: 10.9 (25 °C)

octanol/water

Mobility in soil

Mobility : No data available

Distribution among

: No data available

environmental compartments

Stability in soil : No data available

Other adverse effects

Environmental fate and

pathways

: No data available

Results of PBT and vPvB

assessment

: No data available

Endocrine disrupting

potential

: No data available

Adsorbed organic bound

halogens (AOX)

: No data available

Hazardous to the ozone layer

Ozone-Depletion Potential Not applicable

Additional ecological information - Product

Global warming potential

: No data available

(GWP)

### 13. DISPOSAL CONSIDERATIONS

#### **Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water

courses or the soil.

Do not contaminate ponds, waterways or ditches with

chemical or used container.

: There is no data available for this product.

Offer surplus and non-recyclable solutions to a licensed

disposal company.



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Contaminated packaging : Empty remaining contents.

Dispose of as unused product. Do not re-use empty containers.

#### 14. TRANSPORT INFORMATION

#### International Regulation

#### **IATA**

Not regulated as dangerous goods

#### **IMDG**

Not regulated as dangerous goods

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

Not applicable for product as supplied.

### Special precautions for user

Remarks : Not classified as dangerous in the meaning of transport

regulations.

### 15. REGULATORY INFORMATION

### National regulatory information

### Other international regulations

### The components of this product are reported in the following inventories:

CH INV : The formulation contains substances listed on the Swiss

Inventory

TSCA : On the inventory, or in compliance with the inventory

DSL : All components of this product are on the Canadian DSL

AICS : On the inventory, or in compliance with the inventory

NZIoC : On the inventory, or in compliance with the inventory

ENCS : On the inventory, or in compliance with the inventory

KECI : On the inventory, or in compliance with the inventory

PICCS : On the inventory, or in compliance with the inventory

IECSC : On the inventory, or in compliance with the inventory

TCSI : On the inventory, or in compliance with the inventory

#### **Inventories**



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AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

#### 16. OTHER INFORMATION

Revision Date : 2016/09/22
Responsible Department : Product EHS
Prepared by : Product EHS
Date format : yyyy/mm/dd

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