

# SAFETY DATA SHEET

## DURAD® 110



Version 1.8      Revision Date: 01/08/2019      SDS Number: 400000004909      Date of last issue: 07/11/2018  
Date of first issue: 03/05/2015

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### SECTION 1. IDENTIFICATION

Product name: DURAD® 110

Product Use Description: Fire retardant

Synonyms: Alkylated triphenyl phosphate esters

Company: LANXESS Solutions US Inc.  
2 Armstrong Road  
Shelton, CT  
06484  
United States of America (USA)  
Telephone: (US) +1 866-430-2775

Emergency telephone number: CHEMTREC  
(24 hours) 800-424-9300  
  
US : 800-292-5898 (Technical inquiries)  
For additional emergency telephone numbers see section 16 of the Safety Data Sheet.

Prepared by Product Safety Department  
(US) +1 866-430-2775  
  
MSDSRequest@lanxess.com

Recommended use of the chemical and restrictions on use

Recommended use : Fire retardant

Restrictions on use : Restricted to professional users.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with 29 CFR 1910.1200

Reproductive toxicity (Oral) : Category 2

Specific target organ toxicity : Category 2  
- repeated exposure (Oral)

Short-term (acute) aquatic hazard : Category 2


Long-term (chronic) aquatic hazard : Category 1

#### GHS label elements

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- Hazard pictograms : 
- Signal word : Warning
- Hazard statements : H361 Suspected of damaging fertility or the unborn child if swallowed.  
H373 May cause damage to organs through prolonged or repeated exposure if swallowed.  
H401 Toxic to aquatic life.  
H410 Very toxic to aquatic life with long lasting effects.
- Precautionary statements : **Prevention:**  
P201 Obtain special instructions before use.  
P202 Do not handle until all safety precautions have been read and understood.  
P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.  
P273 Avoid release to the environment.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- Response:**  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P391 Collect spillage.
- Storage:**  
P405 Store locked up.
- Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

- Substance / Mixture : Substance
- Substance name : Alkylated triphenyl phosphate esters

### Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]	68937-41-7	>= 90 - <= 100

## SECTION 4. FIRST AID MEASURES

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- If inhaled : Move to fresh air.  
Obtain medical attention.
- In case of skin contact : Wash off immediately with plenty of water for at least 15 minutes.  
Wash off with soap and water.  
If symptoms persist, call a physician.
- In case of eye contact : Rinse thoroughly with plenty of water, also under the eyelids.  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
- If swallowed : If conscious, make the victim drink the following:  
Drink 1 or 2 glasses of water.  
Get medical attention immediately.
- Most important symptoms and effects, both acute and delayed : toxic effects for reproduction
- Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing  
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
- Notes to physician : The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.
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### SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Specific hazards during fire-fighting : Burning produces irritant fumes.  
Exposure to decomposition products may be a hazard to health.
- Special protective equipment for firefighters : In the event of fire, wear self-contained breathing apparatus.  
Use personal protective equipment.
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### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Evacuate personnel to safe areas.  
Use personal protective equipment.
- Environmental precautions : Discharge into the environment must be avoided.  
Do not contaminate water.  
Do not flush into surface water or sanitary sewer system.
- Methods and materials for containment and cleaning up : Ventilate the area.  
Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local /
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national regulations (see section 13).

## SECTION 7. HANDLING AND STORAGE

- Advice on safe handling : Handle in accordance with good industrial hygiene and safety practice.  
Wear personal protective equipment.  
Avoid contact with skin, eyes and clothing.  
Do not breathe vapours or spray mist.
- Conditions for safe storage : Keep in a dry, cool and well-ventilated place.  
Keep container tightly closed.  
Protect from contamination.
- Further information on storage stability : Stable under recommended storage conditions.

## SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
triphenyl phosphate	115-86-6	TWA	3 mg/m <sup>3</sup>	ACGIH
		TWA	3 mg/m <sup>3</sup>	OSHA Z-1
		TWA	3 mg/m <sup>3</sup>	OSHA P0
		TWA	3 mg/m <sup>3</sup>	NIOSH REL

Contains no substances with occupational exposure limit values.

### Personal protective equipment

- Respiratory protection : In the case of vapour formation use a respirator with an approved filter.  
  
Respirator with combination filter for vapour/particulate
- Filter type : ABEK-P2-filter
- Hand protection
- Material : Nitrile rubber
- Break through time : > 480 min
- Glove thickness : 0.4 mm
- Remarks : Before removing gloves clean them with soap and water.  
Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough. Long sleeve gloves Request information on glove permeation properties from the glove supplier.

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Eye protection : Safety glasses with side-shields

Skin and body protection : To protect against splashes from pouring:  
Chemical resistant apron  
Impervious clothing  
Rubber or plastic boots

Protective measures : These recommendations apply to the product as supplied.  
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : colourless

Odour : odourless

Odour Threshold : No data available

pH : Not applicable

Melting point/range : Not applicable

Boiling point/boiling range : 428 - 518 °F / 220 - 270 °C  
(5.333 hPa)

Flash point : 390 °F / 199 °C  
Method: closed cup

Evaporation rate : No data available

Self-ignition : No data available

Upper explosion limit / Upper flammability limit : No data available

Lower explosion limit / Lower flammability limit : No data available

Vapour pressure : 0.035 hPa (302 °F / 150 °C)

Relative vapour density : No data available

Relative density : 1.170 - 1.180 (68 °F / 20 °C)

Density : No data available

Solubility(ies)  
Water solubility : insoluble

Solubility in other solvents : No data available

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Partition coefficient: n-octanol/water : Pow: 4.9 - 5.2  
No data available

Auto-ignition temperature : 1024 °F / 551 °C  
Auto-flammability

Decomposition temperature : No data available

Self-Accelerating decomposition temperature (SADT) : Method: No information available.

Viscosity  
Viscosity, dynamic : No data available  
Viscosity, kinematic : No data available

Oxidizing potential : No information available.

Molecular weight : No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : None reasonably foreseeable.

Possibility of hazardous reactions : Hazardous polymerisation does not occur.

Conditions to avoid : Not applicable

Incompatible materials : None.

Hazardous decomposition products : Carbon oxides  
Oxides of phosphorus

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Inhalation  
Eye contact  
Skin contact

#### Acute toxicity

#### Components:

#### Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:

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

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Acute inhalation toxicity : LC50 (Rat): > 200 mg/l  
Test atmosphere: vapour

Acute dermal toxicity : LD50 (Rabbit): > 10,000 mg/kg

### Skin corrosion/irritation

#### Product:

Species : Rabbit  
Result : No skin irritation

### Serious eye damage/eye irritation

#### Product:

Species : Rabbit  
Result : No eye irritation  
GLP : no

### Germ cell mutagenicity

#### Components:

#### **Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Genotoxicity in vitro : Test Type: Ames test  
Result: negative

### Carcinogenicity

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

**OSHA** No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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

### Reproductive toxicity

#### Components:

#### **Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Effects on foetal development : Species: Rat  
Application Route: Oral  
General Toxicity Maternal: NOAEL: 200 mg/kg bw/day  
Developmental Toxicity: 400 mg/kg bw/day  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Reproductive toxicity - Assessment : Some evidence of adverse effects on sexual function and fertility, based on animal experiments.

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**STOT - single exposure****Product:**

Assessment : Not classified due to data which are conclusive although insufficient for classification.

**Components:****Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Assessment : Not classified due to data which are conclusive although insufficient for classification.

**STOT - repeated exposure****Product:**

Assessment : May cause damage to organs through prolonged or repeated exposure.

**Components:****Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Exposure routes : Oral  
Target Organs : Adrenal gland, Liver, Reproductive organs  
Assessment : May cause damage to organs through prolonged or repeated exposure.

**Repeated dose toxicity****Components:****Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Species : Rat  
NOAEL : < 25 mg/kg  
Application Route : Oral  
Exposure time : 13 weeks  
Method : OECD Test Guideline 408  
Target Organs : Adrenal gland

**Aspiration toxicity****Product:**

No aspiration toxicity classification

**Further information****Product:**

Remarks : Acute Health Hazard  
Chronic Health Hazard  
Information given is based on data obtained from similar substances.



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**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Product:**

Toxicity to fish :  
Remarks: Information refers to the main component.

Toxicity to daphnia and other :  
aquatic invertebrates      Remarks: Information refers to the main component.

**Components:****Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 1.6 mg/l  
Exposure time: 96 h  
  
LC50 (Pimephales promelas (fathead minnow)): 10.8 mg/l  
Exposure time: 96 h

Toxicity to daphnia and other : EC50 (Daphnia magna (Water flea)): 2.44 mg/l  
aquatic invertebrates      Exposure time: 48 h

Toxicity to fish (Chronic tox- : NOEC (Pimephales promelas (fathead minnow)): 3.1 µg/l  
icity)      Exposure time: 33 d  
Method: OECD Test Guideline 210

Toxicity to daphnia and other : NOEC (Daphnia magna (Water flea)): 0.041 mg/l  
aquatic invertebrates (Chron- Exposure time: 21 d  
ic toxicity)      Method: OECD Test Guideline 211  
GLP: yes

M-Factor (Chronic aquatic : 10  
toxicity)

**Persistence and degradability****Product:**

Biodegradability : Result: Not readily biodegradable.

**Components:****Phenol, isopropylated, phosphate (3:1) [Triphenyl phosphate > 5%]:**

Biodegradability : Result: According to the results of tests of biodegradability this  
product is not readily biodegradable.  
Biodegradation: 17.9 %  
Exposure time: 28 d

**Bioaccumulative potential****Product:**

Bioaccumulation : Remarks: No data available

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### Mobility in soil

#### Product:

Mobility : Remarks: No data available

### Other adverse effects

#### Product:

Results of PBT and vPvB assessment : This substance is not considered to be persistent, bioaccumulating and toxic (PBT).

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: 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).

Additional ecological information : Information given is based on data on the components and the ecotoxicology of similar products.

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues : Dispose of in accordance with local regulations.  
Do not dispose of waste into sewer.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

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## SECTION 14. TRANSPORT INFORMATION

### International Regulations

#### **IATA-DGR**

UN/ID No. : UN 3082  
Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III  
Labels : Miscellaneous  
:  
:  
:  
Environmentally hazardous : yes

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### IMDG-Code

UN number : UN 3082  
Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III  
Labels : 9  
EmS Code : F-A, S-F  
Marine pollutant : yes

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

Not applicable for product as supplied.

### National Regulations

#### 49 CFR

UN/ID/NA number : UN 3082  
Proper shipping name : Environmentally hazardous substances, liquid, n.o.s.  
(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])  
Class : 9  
Packing group : III  
Labels : CLASS 9  
ERG Code : 171  
Marine pollutant : yes(Phenol, isopropylated phosphate (3:1) [Triphenyl phosphate > 5%])

### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know Act

#### CERCLA Reportable Quantity

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

#### SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

#### SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

**SARA 311/312 Hazards** : Reproductive toxicity  
Specific target organ toxicity (single or repeated exposure)

**SARA 313** : 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.

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### Clean Air Act

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 SOCM Intermediate or Final VOC's (40 CFR 60.489).

### California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

**Please note that Section 3 of this document lists only the hazardous components required by the specific country or region hazard communication regulations. The chemical identifiers listed in Section 3 are used globally for hazard communication purposes and may not reflect those used for chemical inventory coverage in a particular country or region. The chemical inventory information given in Section 15 of this document applies to the product as a whole and should be used when evaluating inventory compliance.**

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

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

US.TSCA : On TSCA Inventory

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## SECTION 16. OTHER INFORMATION

### Further information

#### Other Emergency Phone Number

<u>Latin America:</u>	Brazil	+55 113 711 9144
	All other countries	+44 (0) 1235 239 670
<u>Mexico:</u>		+52 555 004 8763

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### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
NIOSH REL : USA. NIOSH Recommended Exposure Limits  
OSHA P0 : USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000  
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek  
OSHA P0 / TWA : 8-hour time weighted average  
OSHA Z-1 / TWA : 8-hour time weighted average

AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

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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

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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.

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