



DuPont™ Assure® II Herbicide

Version 2.0

Revision Date 06/05/2015

Ref. 130000023960

This SDS adheres to the standards and regulatory requirements of the United States and may not meet the regulatory requirements in other countries.

SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

| | | |
|-----------------------|---|--|
| Product name | : | DuPont™ Assure® II Herbicide |
| Tradename/Synonym | : | DPX-79376 Assure Pro Assure Plus Secure B10054988 Quizalofop P-ethyl: Ethyl(R)-2-[4-(6-chloroquinoxalin-2-yl oxy)- phenoxy]propionate |
| Product Use | : | Herbicide |
| Restrictions on use | : | Do not use product for anything outside of the above specified uses |
| Manufacturer/Supplier | : | DuPont 4417 Lancaster Pike Wilmington, DE 19805, USA |
| Product Information | : | 1-800-441-7515 (outside the U.S. 1-302-774-1000) |
| Medical Emergency | : | 1-800-441-3637 (outside the U.S. 1-302-774-1139) |
| Transport Emergency | : | CHEMTREC: +1-800-424-9300 (outside the U.S. +1-703-527-3887) |

SECTION 2. HAZARDS IDENTIFICATION

Product hazard category

| | |
|--|-------------|
| Acute toxicity (Inhalation) | Category 4 |
| Skin irritation | Category 2 |
| Serious eye damage/eye irritation | Category 1 |
| Reproductive toxicity | Category 1B |
| Specific target organ toxicity - single exposure | Category 3 |
| Specific target organ toxicity - | Category 2 |

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repeated exposure
Aspiration hazard

Category 1

Label content

Pictogram

:



Signal word

: Danger

Hazardous warnings

: May be fatal if swallowed and enters airways.
Causes skin irritation.
Causes serious eye damage.
Harmful if inhaled.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May damage fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure. (Liver)


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Hazardous prevention measures

: Obtain special instructions before use.
 Do not handle until all safety precautions have been read and understood.
 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
 Wash skin thoroughly after handling.
 Use only outdoors or in a well-ventilated area.
 Wear eye protection/ face protection.
 Wear protective gloves.
 Use personal protective equipment as required.
 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
 IF ON SKIN: Wash with plenty of soap and water.
 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 IF exposed or concerned: Get medical advice/ attention.
 Immediately call a POISON CENTER/doctor.
 Do NOT induce vomiting.
 If skin irritation occurs: Get medical advice/ attention.
 Take off contaminated clothing and wash before reuse.
 Store in a well-ventilated place. Keep container tightly closed.
 Store locked up.
 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

No applicable data available.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Component | CAS-No. | Concentration |
|--|-------------|---------------|
| Quizalofop p-ethyl | 100646-51-3 | 10.3 % |
| Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified | 64742-94-5 | 78.19 % |


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| | | |
|--|------------|----------|
| N-Methyl-2-pyrrolidone | 872-50-4 | 5 - 10 % |
| Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified (< 0.1% benzene) | 64742-95-6 | 1 - 5 % |
| Other Ingredients | | <=5.51 % |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

SECTION 4. FIRST AID MEASURES

- General advice : Have the product container or label with you when calling a poison control center or doctor, or going for treatment.
For medical emergencies involving this product, call toll free 1-800-441-3637. See Label for Additional Precautions and Directions for Use.
- Inhalation : Move to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth, if possible. Call a poison control center or doctor for treatment advice.
- Skin contact : Take off all contaminated clothing immediately. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.
- Eye contact : Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.
- Ingestion : Call a poison control center or doctor for treatment advice. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Do not give any liquid to the person. Do not give anything by mouth to an unconscious person.
- Most important symptoms/effects, acute and delayed : No applicable data available.

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Protection of first-aiders : No applicable data available.
Notes to physician : Probable mucosal damage may contraindicate the use of gastric lavage.
Contains petroleum distillate. Vomiting may cause aspiration pneumonia.

SECTION 5. FIREFIGHTING MEASURES

Suitable extinguishing media : Water spray, Foam, Dry chemical, Carbon dioxide (CO2)

Unsuitable extinguishing media : High volume water jet, (contamination risk)

Specific hazards : No applicable data available.

Special protective equipment for firefighters : Wear full protective clothing and self-contained breathing apparatus.

Further information : Evacuate personnel and keep upwind of fire.
(on small fires) If area is heavily exposed to fire and if conditions permit, let fire burn itself out since water may increase the area contaminated. Cool containers/tanks with water spray.

SECTION 6. ACCIDENTAL RELEASE MEASURES

NOTE: Review FIRE FIGHTING MEASURES and HANDLING (PERSONNEL) sections before proceeding with clean-up. Use appropriate PERSONAL PROTECTIVE EQUIPMENT during clean-up.

Safeguards (Personnel) : Evacuate personnel, thoroughly ventilate area, use self-contained breathing apparatus. Use personal protective equipment.

Environmental precautions : Prevent material from entering sewers, waterways, or low areas.

Spill Cleanup : Dike spill.
Sweep up and shovel into suitable containers for disposal.
If spill area is on ground near valuable plants or trees, remove top 2 inches of soil after initial cleanup.
Dispose of in an approved container.

Accidental Release Measures : Never return spills in original containers for re-use. Dispose of in accordance with local regulations.



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SECTION 7. HANDLING AND STORAGE

- | | | |
|-----------------------------|---|---|
| Handling (Personnel) | : | Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove clothing/PPE immediately if material gets inside. Wash thoroughly and put on clean clothing. Remove personal protective equipment immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing. |
| Handling (Physical Aspects) | : | Combustible Keep away from heat and sources of ignition. |
| Dust explosion class | : | No applicable data available. |
| Storage | : | Store in original container. Do not contaminate water, other pesticides, fertilizer, food or feed in storage. Store in a cool, dry place. Keep out of the reach of children. |
| Storage period | : | No applicable data available. |
| Storage temperature | : | No applicable data available. |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- | | | |
|-------------------------------|---|--|
| Engineering controls | : | Use only with adequate ventilation. Keep container tightly closed. When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240 (d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS. |
| Personal protective equipment | | |
| Skin and body protection | : | Applicators and other handlers must wear: Long sleeved shirt and long pants Chemical resistant gloves, such as barrier laminate or Viton Shoes plus socks Protective eyewear PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and that involves contact with anything that has been treated, such as plants, soil, or water, is: Coveralls Chemical resistant gloves, such as barrier laminate or Viton |



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Shoes plus socks
Protective eyewear

Protective measures : Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product. Do not reuse them. Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

Exposure Guidelines
Exposure Limit Values

| | | | | |
|---|----------|-----------|--|--|
| Solvent naphtha (petroleum), heavy arom.; | | | | |
| Permissible exposure limit: | (OSHA) | 100 ppm | 400 mg/m3 | 8 hr. TWA |
| TLV | (ACGIH) | 200 mg/m3 | TWA | Non-aerosol. as total hydrocarbon vapor |
| | | Remarks | P: Application restricted to conditions in which there are negligible aerosol exposures. | |
| AEL * | (DUPONT) | 100 ppm | 8 & 12 hr. TWA | |
| | | | | |
| N-Methyl-2-pyrrolidone | | | | |
| AEL * | (DUPONT) | 5 ppm | 8 & 12 hr. TWA, | Skin |
| | | | | |
| Quizalofop p-ethyl | | | | |
| AEL * | (DUPONT) | 1 mg/m3 | 12 hr. TWA | Total dust. |
| AEL * | (DUPONT) | 0.5 mg/m3 | 12 hr. TWA | Respirable dust. |
| AEL * | (DUPONT) | 2 mg/m3 | 8 hr. TWA | Total dust. |
| AEL * | (DUPONT) | 1 mg/m3 | 8 hr. TWA | Respirable dust. |
| | | | | |
| Solvent naphtha (petroleum), light arom.; | | | | |
| AEL * | (DUPONT) | 50 ppm | 8 & 12 hr. TWA | Low boiling point naphtha - unspecified (< 0.1% benzene) |

Biological Exposure Indices

| | | | |
|------------------------|---------|----------|--|
| N-Methyl-2-pyrrolidone | | | |
| BEI | (ACGIH) | 100 mg/l | 5-Hydroxy-N-methyl-2-pyrrolidone/Urine |
| | | | Sampling time: End of shift. |

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* AEL is DuPont's Acceptable Exposure Limit. Where governmentally imposed occupational exposure limits which are lower than the AEL are in effect, such limits shall take precedence.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Physical state : liquid
Form : liquid
Color : dark amber

Odor : aromatic, hydrocarbon-like

Odor threshold : No applicable data available.

pH : 5 - 7
(1% solution in water)

Melting point/range : No applicable data available.

Boiling point/boiling range : No applicable data available.

Flash point : 98.9 °C
closed cup
Method: Setaflash closed cup - SCC

Evaporation rate : No applicable data available.

Flammability (solid, gas) : No applicable data available.

Upper explosion limit : No applicable data available.

Lower explosion limit : No applicable data available.

Vapour Pressure : No applicable data available.

Vapour density : No applicable data available.

Specific gravity (Relative density) : 1.02

Water solubility : emulsifiable

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| | |
|--|---------------------------------|
| Solubility(ies) | : No applicable data available. |
| Partition coefficient: n-octanol/water | : No applicable data available. |
| Auto-ignition temperature | : No applicable data available. |
| Decomposition temperature | : No applicable data available. |
| Viscosity, kinematic | : No applicable data available. |
| Viscosity, dynamic | : No applicable data available. |
| Oxidizing Substance | : The product is not oxidizing. |

SECTION 10. STABILITY AND REACTIVITY

| | |
|------------------------------------|---|
| Reactivity | : No applicable data available. |
| Chemical stability | : Stable at normal temperatures and storage conditions. |
| Possibility of hazardous reactions | : Heating can release vapours which can be ignited. Vapours may form explosive mixture with air. Polymerization will not occur. |
| Conditions to avoid | : Heat, flames and sparks. |
| Incompatible materials | : None reasonably foreseeable. |
| Hazardous decomposition products | : No applicable data available. |

SECTION 11. TOXICOLOGICAL INFORMATION

| | |
|------------------------------|--|
| DuPont™ Assure® II Herbicide | |
| Inhalation 4 h LC50 | : 2.6 - 4.4 mg/l , Rat |
| Dermal LD50 | : > 2,000 mg/kg , Rabbit |
| Oral LD50 | : 5,900 mg/kg , Rat |
| Skin irritation | : Skin irritation, Rabbit |
| Eye irritation | : Risk of serious damage to eyes., Rabbit |
| Sensitisation | : Did not cause sensitisation on laboratory animals., Guinea pig |


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| | | |
|---|---|---|
| Further information | : | Information given is based on data on the components and the toxicology of similar products. |
| Quizalofop p-ethyl | | |
| Repeated dose toxicity | : | Oral - feed Mouse - 90 d Liver effects |
| Carcinogenicity | : | Animal testing did not show any carcinogenic effects. Not classifiable as a human carcinogen. |
| Mutagenicity | : | Tests on bacterial or mammalian cell cultures did not show mutagenic effects. |
| Reproductive toxicity | : | No toxicity to reproduction |
| Teratogenicity | : | Animal testing showed no developmental toxicity. |
| Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified | | |
| Repeated dose toxicity | : | Oral Rat - No toxicologically significant effects were found., Information given is based on data obtained from similar substances. |
| | | Dermal Rabbit - No toxicologically significant effects were found., Information given is based on data obtained from similar substances. |
| | | Inhalation Rat - No toxicologically significant effects were found., Information given is based on data obtained from similar substances. |
| Carcinogenicity | : | Not classifiable as a human carcinogen. Overall weight of evidence indicates that the substance is not carcinogenic. Information given is based on data obtained from similar substances. |
| Mutagenicity | : | Animal testing did not show any mutagenic effects. |

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Tests on bacterial or mammalian cell cultures did not show mutagenic effects.

Information given is based on data obtained from similar substances.

Reproductive toxicity : No toxicity to reproduction
No effects on or via lactation
Animal testing showed no reproductive toxicity.
Information given is based on data obtained from similar substances.

Teratogenicity : Animal testing showed no developmental toxicity.
Information given is based on data obtained from similar substances.

N-Methyl-2-pyrrolidone

Repeated dose toxicity

: Oral
Rat
- Method: OECD Test Guideline 408
Reduced body weight gain

Inhalation

Rat

-

Respiratory irritation

Dermal

Rabbit

- Method: OECD Test Guideline 410

No toxicologically significant effects were found.

Carcinogenicity : Not classifiable as a human carcinogen.
Overall weight of evidence indicates that the substance is not carcinogenic.

Mutagenicity : Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
Animal testing did not show any mutagenic effects.

Reproductive toxicity : Presumed human reproductive toxicant
Animal testing showed effects on reproduction at levels equal to or above those causing parental toxicity.
Reduced fertility

Teratogenicity : Animal testing showed effects on embryo-fetal development at levels equal to or above those causing maternal toxicity.
Reduced embryo-foetal viability


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Foetal malformations

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified (< 0.1% benzene)

 Repeated dose toxicity : Skin contact
 Rat

-

NOAEL: 3,750 mg/kg

No toxicologically significant effects were found., Information given is based on data obtained from similar substances.

 Carcinogenicity : Not classifiable as a human carcinogen.
 Animal testing did not show any carcinogenic effects.
 Information given is based on data obtained from similar substances.

 Mutagenicity : Animal testing did not show any mutagenic effects.
 Tests on bacterial or mammalian cell cultures did not show mutagenic effects.
 Information given is based on data obtained from similar substances.

 Reproductive toxicity : No toxicity to reproduction
 Animal testing showed no reproductive toxicity.
 No effects on or via lactation
 Information given is based on data obtained from similar substances.

 Teratogenicity : Animal testing showed no developmental toxicity.
 Information given is based on data obtained from similar substances.

Carcinogenicity

The carcinogenicity classifications for this product and/or its ingredients have been determined according to HazCom 2012, Appendix A.6. The classifications may differ from those listed in the National Toxicology Program (NTP) Report on Carcinogens (latest edition) or those found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs (latest edition).

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by IARC, NTP, or OSHA, as a carcinogen.

SECTION 12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Quizalofop p-ethyl

96 h LC50

: Oncorhynchus mykiss (rainbow trout) 0.72 mg/l


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72 h ErC50 : Pseudokirchneriella subcapitata (green algae) 0.021 mg/l
 48 h EC50 : Daphnia magna (Water flea) 51.9 mg/l
 21 d : NOEC Daphnia magna (Water flea) 0.787 mg/l

Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified
 : no data available

21 d : NOEC Daphnia magna (Water flea) 0.48 mg/l

N-Methyl-2-pyrrolidone

96 h LC50 : Oncorhynchus mykiss (rainbow trout) > 500 mg/l
 72 h ErC50 : Desmodesmus subspicatus (green algae) 600.5 mg/l
 72 h NOEC : Desmodesmus subspicatus (green algae) 125 mg/l
 21 d : NOEC Daphnia magna (Water flea) 12.5 mg/l OECD Test Guideline 211

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified (< 0.1% benzene)

96 h LC50 : Pimephales promelas (fathead minnow) 8.2 mg/l
 Information given is based on data obtained from similar substances.
 72 h ErC50 : Pseudokirchneriella subcapitata (green algae) 3.1 mg/l OECD Test Guideline 201
 Information given is based on data obtained from similar substances.
 72 h NOEC : Pseudokirchneriella subcapitata (green algae) 0.5 mg/l OECD Test Guideline 201
 Information given is based on data obtained from similar substances.
 48 h EC50 : Daphnia magna (Water flea) 4.5 mg/l OECD Test Guideline 202
 Information given is based on data obtained from similar substances.
 21 d : NOEC Daphnia magna (Water flea) 2.6 mg/l OECD Test Guideline 211
 Information given is based on data obtained from similar substances.

Environmental Fate

Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified


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Biodegradability : 58.6 % OECD Test Guideline 301
 Not readily biodegradable.
 Information given is based on data obtained from similar substances.

N-Methyl-2-pyrrolidone
 Biodegradability : 73 % OECD Test Guideline 301C
 Readily biodegradable, according to appropriate OECD test.

Bioaccumulation : Accumulation in aquatic organisms is unlikely.

Solvent naphtha (petroleum), light arom.; Low boiling point naphtha - unspecified (< 0.1% benzene)
 Biodegradability : Biodegradable OECD Test Guideline 301
 Information given is based on data obtained from similar substances.

Additional ecological information : Do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment washwaters or rinsate.

SECTION 13. DISPOSAL CONSIDERATIONS

Waste disposal methods - Product : Do not contaminate water, food or feed by disposal. Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

Waste disposal methods - Container : Container Refilling and Disposal:
 Refer to the product label for instructions.
 Do not transport if this container is damaged or leaking.

In the event of a major spill, fire or other emergency, call 1-800-441-3637 day or night.

Contaminated packaging : No applicable data available.

SECTION 14. TRANSPORT INFORMATION

IATA_C UN number : 3334


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| | | |
|------|----------------------|---|
| | Proper shipping name | : Aviation regulated liquid, n.o.s. (Quizalofop p-ethyl) |
| IMDG | Class | : 9 |
| | Packing group | : III |
| | Labelling No. | : 9MI |
| | UN number | : 3082 |
| | Proper shipping name | : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quizalofop p-ethyl) |
| | Class | : 9 |
| | Packing group | : III |
| | Labelling No. | : 9 |
| | Marine pollutant | : yes (Quizalofop p-ethyl) |

Not regulated by DOT/49 CFR unless shipped in bulk package or by water.

SECTION 15. REGULATORY INFORMATION

Other regulations : This Safety Data Sheet is for a pesticide product registered by the US Environmental Protection Agency (USEPA) and is therefore also subject to certain labeling requirements under US pesticide law (FIFRA). These requirements differ from the classification criteria and hazard information required by OSHA for safety data sheets, and for workplace labels of non-pesticide chemicals. The following is the mandatory hazard information required by USEPA on the pesticide label:

Danger

Causes irreversible eye damage. Harmful if swallowed, inhaled or absorbed through skin. Avoid contact with skin, eyes and clothing. Avoid breathing vapours or mist. This product is toxic to fish. This product is toxic to: Aquatic invertebrates

SARA 313 Regulated Chemical(s) : N-Methyl-2-pyrrolidone

PA Right to Know Regulated Chemical(s) : Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for Special Hazardous Substances): Solvent naphtha (petroleum), heavy arom.; Kerosine - unspecified, N-Methyl-2-pyrrolidone



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Title III hazard classification : Acute Health Hazard: Yes
 Chronic Health Hazard: Yes
 Fire: No
 Reactivity/Physical hazard: No
 Pressure: No

EPA Reg. No. : 352-541
 In the United States this product is regulated by the US Environmental Protection Agency (EPA) under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). It is a violation of Federal law to use this product in a manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SECTION 16. OTHER INFORMATION

| | NFPA |
|------------------------------|------|
| Health : | 2 |
| Flammability : | 1 |
| Reactivity/Physical hazard : | 0 |

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Revision Date : 06/05/2015

Contact person : DuPont Crop Protection, Wilmington, DE, 19898, Phone: 1-888-638-7668

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.

Significant change from previous version is denoted with a double bar.



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