SAFETY DATA SHEET



1. Identification

Product identifier Assure® II Herbicide

Other means of identification

SDS number 631

Product registration

5481-646

number

Herbicide. Recommended use

Recommended restrictions See product label for restrictions.

Do not handle without appropriate PPE (see section 8).

Keep out of the Reach of Children!

EPA Registration number EPA: 5481-646

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name **AMVAC Chemical Corporation**

Address 4695 MacArthur Court

Suite 1200

Newport Beach, CA 92660

Telephone AMVAC Chemical Corp 949-260-1200

> **AMVAC Chemical Corp** 949-260-6270(FAX)

Website www.amvac.com CustServ@amvac.com E-mail

Medical 888-681-4261 **Emergency phone number**

CHEMTREC® 800-424-9300

(USA+Canada)

Product Use 888-462-6822 CHEMTREC® (Outside +1-703-527-3887

USA)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Acute toxicity, inhalation Category 4

> Skin corrosion/irritation Category 2 Serious eye damage/eye irritation Category 1 Reproductive toxicity Category 1B

Specific target organ toxicity, single exposure Category 3 narcotic effects

Specific target organ toxicity, repeated

exposure

Category 2

Aspiration hazard Category 1

Environmental hazards Hazardous to the aquatic environment, acute Category 1

hazard

Hazardous to the aquatic environment,

long-term hazard

Category 2

OSHA defined hazards Not classified.

Label elements



Signal word Danger

Material name: Assure® II Herbicide SDS US

Harmful if inhaled. **Hazard statement**

Causes skin irritation. Causes serious eye damage.

May damage fertility or the unborn child. May cause drowsiness or dizziness.

May cause damage to organs (Liver) through prolonged or repeated exposure.

May be fatal if swallowed and enters airways.

Very toxic to aquatic life.

Toxic to aquatic life with long lasting effects.

Precautionary statement

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe mist/vapors/spray. Wash 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.

Avoid release to the environment.

Response

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.

Do NOT induce vomiting.

IF ON SKIN: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

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. Call a poison center/doctor.

If exposed or concerned: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Collect spillage.

Storage

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazard(s) not otherwise

classified (HNOC)

None known.

Supplemental information

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced in section 15. The pesticide label also includes other important information, including directions for use.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	<u></u> %
Quizalofop-p-ethyl	Ethyl (R)-2-[4-(6-chloroquinoxalin-2-yloxy)phen oxy]propionate	100646-51-3	10.3
Solvent Naphtha, Petroleum, Heavy Aromatic ND		64742-94-5	70 - 80
N-Methylpyrolidone		872-50-4	5 - 10
Aromatic Petroleum Distillates		64742-95-6	1 - 5

Constituents

Chemical name	Common name and synonyms	CAS number	%
2-Methylnaphthalene		91-57-6	< 35
1-methylnaphthalene		90-12-0	< 20

4. First-aid measures

Inhalation

Remove victim to fresh air and keep at rest in a position comfortable for breathing. Oxygen or artificial respiration if needed. Do not use mouth-to-mouth method if victim inhaled the substance. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other

Material name: Assure® II Herbicide

proper respiratory medical device. Call a poison center or doctor/physician.

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Skin contact Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get

medical advice/attention. Wash contaminated clothing before reuse.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Call a physician or poison control center immediately. Rinse mouth. Do not induce vomiting. If

vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Most important symptoms/effects, acute and

symptoms/effects, acute an delayed

Skin irritation. May cause redness and pain. Causes serious eye damage.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.

Aspiration may cause pulmonary edema and pneumonitis. Headache. Nausea, vomiting. Diarrhea.

General information

IF exposed or concerned: Get medical advice/attention. If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Unsuitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO2). Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

Specific methods

General fire hazards

Use standard firefighting procedures and consider the hazards of other involved materials.

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of vapors and spray mists. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

This product is miscible in water. Prevent entry into waterways, sewer, basements or confined areas.

Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use. Put material in suitable, covered, labeled containers. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid release to the environment. Inform appropriate managerial or supervisory personnel of all environmental releases. Prevent further leakage or spillage if safe to do so. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid inhalation of vapors and spray mists. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Pregnant or breastfeeding women must not handle this product. Should be handled in closed systems, if possible. Use only outdoors or in a well-ventilated area. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Avoid release to the environment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store locked up. Store in tightly closed container. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS).

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8. Exposure controls/personal protection

Occupational exposure limits

The following constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

US. ACGIH Threshold Limit Values

Components	Туре	Value	Form
Solvent Naphtha, Petroleum, Heavy Aromatic ND (CAS 64742-94-5)	TWA	200 mg/m3	Non-aerosol.
Constituents	Туре	Value	
1-methylnaphthalene (CAS 90-12-0)	TWA	0.5 ppm	
2-Methylnaphthalene (CAS 91-57-6)	TWA	0.5 ppm	
US. NIOSH: Pocket Guide to Chen	nical Hazards		
Components	Туре	Value	
Solvent Naphtha, Petroleum, Heavy Aromatic ND (CAS 64742-94-5)	TWA	100 mg/m3	
US. Workplace Environmental Exp	oosure Level (WEEL) Guides		
Components	Type	Value	
N-Methylpyrolidone (CAS 872-50-4)	TWA	40 mg/m3	

Biological limit values

ACGIH Biological Exposure Indices

Components	Value	Determinant	Specimen	Sampling Time
N-Methylpyrolidone (CAS 872-50-4)	100 mg/l	5-Hydroxy-N-m ethyl-2-pyrrolid one	Urine	*
Constituents	Value	Determinant	Specimen	Sampling Time
2-Methylnaphthalene (CAS 91-57-6)	2.5 μg/l	1-Hydroxypyre ne, with hydrolysis (1-HP)	Urine	*

^{* -} For sampling details, please see the source document.

Exposure guidelines

US ACGIH Threshold Limit Values: Skin designation

1-methylnaphthalene (CAS 90-12-0)

2-Methylnaphthalene (CAS 91-57-6)

Solvent Naphtha, Petroleum, Heavy Aromatic ND (CAS 64742-94-5)

Can be absorbed through the skin.

Can be absorbed through the skin.

US WEEL Guides: Skin designation

N-Methylpyrolidone (CAS 872-50-4)

Can be absorbed through the skin.

Appropriate engineering

controls

Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

10 ppm

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields (or goggles).

Skin protection

Hand protection Wear appropriate chemical resistant gloves.

Other Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.

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If engineering controls do not maintain airborne concentrations below recommended exposure Respiratory protection

limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Chemical respirator with organic vapor

cartridge.

Thermal hazards Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance

Liquid. Physical state

Liquid. Emulsifiable Concentrate (EC) **Form**

Color Dark amber. Odor Aromatic solvent **Odor threshold** Not available. Not available. pН Melting point/freezing point Not available. Initial boiling point and boiling Not available.

range

210 °F (99 °C) Flash point **Evaporation rate** Not available. Flammability (solid, gas) Not applicable. Upper/lower flammability or explosive limits

Explosive limit - lower (%) Not available. Not available. Explosive limit - upper (%) Not available. Vapor pressure Vapor density Not available.

Relative density 1.02

Solubility(ies)

Emulsifiable Solubility (water) **Auto-ignition temperature** Not available. Not available. **Decomposition temperature Viscosity** Not available.

Other information

1.02 g/cm3 Density **Explosive properties** Not explosive.

Combustible IIIB estimated Flammability class

Oxidizing properties Not oxidizing. pH in aqueous solution 5 - 7 1% solution

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Material is stable under normal conditions. Possibility of hazardous Hazardous polymerization does not occur.

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Avoid Conditions to avoid

temperatures exceeding the flash point. Contact with incompatible materials.

Strong oxidizing agents. Peroxides. Phenols. Incompatible materials **Hazardous decomposition** No hazardous decomposition products are known.

products

reactions

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11. Toxicological information

Information on likely routes of exposure

InhalationHarmful if inhaled.Skin contactCauses skin irritation.

Eye contact Causes serious eye damage.

Ingestion Droplets of the product aspirated into the lungs through ingestion or vomiting may cause a serious

chemical pneumonia.

Symptoms related to the physical, chemical and toxicological characteristics

Aspiration may cause pulmonary edema and pneumonitis. Headache. Nausea, vomiting. Diarrhea. Skin irritation. May cause redness and pain. Causes serious eye damage.

Information on toxicological effects

Acute toxicity Harmful if inhaled.

Product Species Test Results

Assure® II Herbicide

<u>Acute</u>

Dermal

LD50 Rabbit > 2000 mg/kg

Inhalation

LC50 Rat 2.6 - 4.4 mg/l, 4 h

Oral

LD50 Rat 5900 mg/kg

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/eye

irritation

Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization Not a respiratory sensitizer.

Skin sensitizationThis product is not expected to cause skin sensitization.Germ cell mutagenicityBased on available data, the classification criteria are not met.CarcinogenicityBased on available data, the classification criteria are not met.

IARC Monographs. Overall Evaluation of Carcinogenicity

Aromatic Petroleum Distillates (CAS 64742-95-6) 3 Not classifiable as to carcinogenicity to humans.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

US. National Toxicology Program (NTP) Report on Carcinogens

2-Methylnaphthalene (CAS 91-57-6) Known To Be Human Carcinogen.

Reproductive toxicityMay damage fertility or the unborn child. **Specific target organ toxicity -**May cause drowsiness and dizziness.

single exposure

Specific target organ toxicity -

iviay cause drowsiness and dizziness.

repeated exposure

Aspiration hazard

May be fatal if swallowed and enters airways.

Chronic effects Prolonged inhalation may be harmful.

12. Ecological information

Ecotoxicity Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Components		Species	Test Results	
Quizalofop-p-ethyl (C/	AS 100646-51-3)			
Aquatic				
Crustacea	NOEC	Daphnia magna	0.787 mg/l, 21 d	
Acute				
Algae	EC50	Pseudokirchnerella subcapitata	0.021 mg/l, 72 h	
Crustacea	EC50	Daphnia magna	51.9 mg/l, 48 h	

May cause damage to organs through prolonged or repeated exposure. Liver.

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Components **Species Test Results**

LC50 Fish Rainbow trout, donaldson trout 0.72 mg/l, 96 h

(Oncorhynchus mykiss)

Persistence and degradability

No data is available on the degradability of any ingredients in the mixture.

Bioaccumulative potential

Partition coefficient n-octanol / water (log Kow)

N-Methylpyrolidone -0.54Solvent Naphtha, Petroleum, Heavy Aromatic ND > 3

Mobility in soil No data available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation

potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow

this material to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches

with chemical or used container. Dispose of contents/container in accordance with

local/regional/national/international regulations.

Dispose in accordance with all applicable regulations. Local disposal regulations

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste

disposal company.

Waste from residues / unused

products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see:

Disposal instructions).

Since emptied containers may retain product residue, follow label warnings even after container is Contaminated packaging

emptied. Empty containers should be taken to an approved waste handling site for recycling or

disposal.

14. Transport information

DOT

UN3082 **UN** number

UN proper shipping name Transport hazard class(es) Environmentally hazardous substances, liquid, n.o.s. (Quizalofop-p-ethyl), MARINE POLLUTANT

Class 9 Subsidiary risk 9 Label(s) Packing group Ш **Environmental hazards**

Marine pollutant Yes

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Special provisions 8, 146, 335, IB3, T4, TP1, TP29

155 Packaging exceptions 203 Packaging non bulk 241 Packaging bulk

IATA

UN number UN3082

Environmentally hazardous substance, liquid, n.o.s. (Quizalofop-p-ethyl) **UN proper shipping name**

Transport hazard class(es)

9 Class Subsidiary risk Ш Packing group **Environmental hazards** Yes **ERG Code** 9L

Other information

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Passenger and cargo

aircraft

Allowed with restrictions.

Cargo aircraft only Allowed with restrictions.

Read safety instructions, SDS and emergency procedures before handling.

IMDG

UN3082 **UN** number

UN proper shipping name

ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Quizalofop-p-ethyl), MARINE POLLUTANT

Transport hazard class(es)

Class 9 Subsidiary risk Ш Packing group

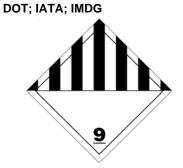
Environmental hazards

Marine pollutant Yes F-A, S-F

EmS

Special precautions for user Read safety instructions, SDS and emergency procedures before handling. Not established.

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



Marine pollutant



General information

DOT Regulated Severe Marine Pollutant. IMDG Regulated Marine Pollutant. This product is not regulated when shipped by highway or rail in non-bulk packaging (maximum capacity of 450 L (119 gallons) or less). When shipped in bulk or by air or vessel (non-bulk or bulk) this product is regulated according to the data shown.

Material name: Assure® II Herbicide

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

This chemical is a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets (SDS), and for workplace labels of non-pesticide chemicals. The hazard information required on the pesticide label is reproduced below. The pesticide label also includes other important information, including directions for use.

HAZARD TO HUMANS AND DOMESTIC ANIMALS.

DANGER:

Causes irreversible eye damage. Harmful if swallowed, absorbed through skin or inhaled. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor or spray mist.

ENVIRONMENTAL HAZARDS

This product is toxic to fish and aquatic invertebrates. Do not apply directly to water, or to areas where surface water is present (except for application to cranberry bogs) or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwater or rinsate.

Toxic Substances Control Act (TSCA)

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

N-Methylpyrolidone (CAS 872-50-4)

1.0 % Annual Export Notification required.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergency release notification

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous

Yes

chemical

Classified hazard categories

Acute toxicity (any route of exposure)

Skin corrosion or irritation

Serious eye damage or eye irritation

Reproductive toxicity

Specific target organ toxicity (single or repeated exposure)

Aspiration hazard

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.	
N-Methylpyrolidone	872-50-4	5 - 10	

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

2-Methylnaphthalene (CAS 91-57-6)

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act

(SDWA)

Contains component(s) regulated under the Safe Drinking Water Act.

International Inventories

Country(s) or region Inventory name On inventory (yes/no)* Domestic Substances List (DSL) Canada

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Country(s) or region Inventory name On inventory (yes/no)*

Canada Non-Domestic Substances List (NDSL) No

United States & Puerto Rico Toxic Substances Control Act (TSCA) Inventory No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue dateNov-06-2019Revision dateOct-28-2020

Version # 1.1

HMIS® ratings Health: 3* Flammability: 1

Physical hazard: 0

NFPA ratings Health: 3

Flammability: 1 Instability: 0

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information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information

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Revision informationThis document has undergone significant changes and should be reviewed in its entirety.

Material name: Assure® II Herbicide sps us