



AQUA-RESLIN®

Version 2.0 / USA
102000004847

1/11
Revision Date: 02/11/2015
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Trade name AQUA-RESLIN®
Product code (UVP) 05952255
SDS Number 102000004847
EPA Registration No. 432-796

Relevant identified uses of the substance or mixture and uses advised against

Use Insecticide
Restrictions on use See product label for restrictions.

Information on manufacturer

Bayer Environmental Science
2 T.W. Alexander Drive
Research Triangle PK, NC 27709
United States

Emergency telephone no.

Emergency Telephone Number (24hr/ 7 days) 1-800-334-7577 (24 hours/day)
Product Information Telephone Number 1-800-331-2867
SDS Information or Request SDSINFO.BCS-NA@bayer.com

SECTION 2: HAZARDS IDENTIFICATION

Classification in accordance with regulation HCS 29CFR §1910.1200

Acute toxicity (Oral, Inhalation): Category 4



Signal word: Warning

Hazard statements

Harmful if swallowed or if inhaled.

Precautionary statements

Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Avoid breathing mist and spray.
Use only outdoors or in a well-ventilated area.



AQUA-RESLIN®

Version 2.0 / USA
102000004847

2/11
Revision Date: 02/11/2015
Print Date: 02/11/2015

IF SWALLOWED: Call a POISON CENTER/doctor/physician if you feel unwell.
Rinse mouth.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER/doctor/physician if you feel unwell.
Dispose of contents/container in accordance with local regulation.

Other hazards

No other hazards known.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Component Name	CAS-No.	Concentration % by weight
Permethrin	52645-53-1	20.00
Piperonyl butoxide	51-03-6	20.00
Naphtha (petroleum), heavy alkylate	64741-65-7	9.50
Fatty alcohol polyglycol ether	9004-98-2	1.35

SECTION 4: FIRST AID MEASURES

Description of first aid measures

General advice	When possible, have the product container or label with you when calling a poison control center or doctor or going for treatment.
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 physician or poison control center immediately.
Skin contact	Take off contaminated clothing and shoes immediately. Wash off immediately with plenty of water for at least 15 minutes. Call a physician or poison control center immediately.
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 physician or poison control center immediately.
Ingestion	Call a physician or poison control center immediately. Rinse out mouth and give water in small sips to drink. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Do not leave victim unattended.

Most important symptoms and effects, both acute and delayed

Indication of any immediate medical attention and special treatment needed

Risks	Contains hydrocarbon solvents. May pose an aspiration pneumonia hazard. This product contains a pyrethroid.
Treatment	Appropriate supportive and symptomatic treatment as indicated by the patient's condition is recommended. There is no specific antidote.



AQUA-RESLIN®

Version 2.0 / USA
102000004847

3/11
Revision Date: 02/11/2015
Print Date: 02/11/2015

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Suitable Carbon dioxide (CO₂), Dry chemical, Foam, Water

Unsuitable None known.

Special hazards arising from the substance or mixture Dangerous gases are evolved in the event of a fire.

Advice for firefighters

Special protective equipment for fire-fighters Firefighters should wear NIOSH approved self-contained breathing apparatus and full protective clothing.

Further information Fight fire from upwind position. Keep out of smoke. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses.

Flash point > 93 °C

Autoignition temperature no data available

Lower explosion limit no data available

Upper explosion limit no data available

Explosivity not applicable

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Precautions Keep unauthorized people away. Isolate hazard area. Avoid contact with spilled product or contaminated surfaces.

Methods and materials for containment and cleaning up

Methods for cleaning up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Collect and transfer the product into a properly labelled and tightly closed container. Clean contaminated floors and objects thoroughly, observing environmental regulations.

Additional advice Use personal protective equipment. Do not allow to enter soil, waterways or waste water canal.

Reference to other sections Information regarding safe handling, see section 7.
Information regarding personal protective equipment, see section 8.
Information regarding waste disposal, see section 13.



AQUA-RESLIN®

Version 2.0 / USA
102000004847

4/11

Revision Date: 02/11/2015
Print Date: 02/11/2015

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Advice on safe handling Use only in area provided with appropriate exhaust ventilation. Handle and open container in a manner as to prevent spillage.

Hygiene measures Wash hands thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco, using the toilet or applying cosmetics.
Remove Personal Protective Equipment (PPE) immediately after handling this product. Remove soiled clothing immediately and clean thoroughly before using again. Wash thoroughly and put on clean clothing.

Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers Store in a cool, dry place and in such a manner as to prevent cross contamination with other crop protection products, fertilizers, food, and feed. Store in original container and out of the reach of children, preferably in a locked storage area.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Components	CAS-No.	Control parameters	Update	Basis
Permethrin	52645-53-1	5 mg/m3 (TWA)	03 2014	ACGIH
Permethrin	52645-53-1	5 mg/m3 (REL)	2010	NIOSH
Permethrin	52645-53-1	5 mg/m3 (PEL)	02 2006	OSHA Z1
Permethrin	52645-53-1	5 mg/m3 (TWA)	1989	OSHA Z1A
Permethrin	52645-53-1	5 mg/m3 (TWA)	06 2008	TN OEL
Permethrin (Particulate.)	52645-53-1	50ug/m3 (ST ESL)	02 2013	TX ESL
Permethrin (Particulate.)	52645-53-1	5ug/m3 (AN ESL)	02 2013	TX ESL
Permethrin	52645-53-1	5 mg/m3 (TWA PEL)	09 2013	US CA OEL
Permethrin	52645-53-1	10 mg/m3 (TWA)		OES BCS*
Piperonyl butoxide	51-03-6	500 ppm (TWA)		OES BCS*
Naphtha (petroleum), heavy alkylate	64741-65-7	400 mg/m3/100 ppm (REL)	2010	NIOSH
Naphtha (petroleum), heavy	64741-65-7	400 mg/m3/100 ppm	02 2006	OSHA Z1



AQUA-RESLIN®

Version 2.0 / USA
102000004847

5/11
Revision Date: 02/11/2015
Print Date: 02/11/2015

alkylate		(PEL)		
Naphtha (petroleum), heavy alkylate	64741-65-7	400 mg/m3/100 ppm (TWA)	1989	OSHA Z1A
Naphtha (petroleum), heavy alkylate	64741-65-7	400 mg/m3/100 ppm (TWA)	06 2008	TN OEL
Naphtha (petroleum), heavy alkylate	64741-65-7	500ppb (ST ESL)	07 2011	TX ESL
Naphtha (petroleum), heavy alkylate	64741-65-7	3000ug/m3 (ST ESL)	07 2011	TX ESL
Naphtha (petroleum), heavy alkylate	64741-65-7	300ug/m3 (AN ESL)	07 2011	TX ESL
Naphtha (petroleum), heavy alkylate	64741-65-7	50ppb (AN ESL)	07 2011	TX ESL
Naphtha (petroleum), heavy alkylate	64741-65-7	1,800 mg/m3/400 ppm (STEL)	09 2013	US CA OEL
Naphtha (petroleum), heavy alkylate	64741-65-7	1,350 mg/m3/300 ppm (TWA PEL)	09 2013	US CA OEL
Fatty alcohol polyglycol ether (Vapor.)	9004-98-2	100ug/m3 (AN ESL)	02 2013	TX ESL
Fatty alcohol polyglycol ether (Vapor.)	9004-98-2	1000ug/m3 (ST ESL)	02 2013	TX ESL

*OES BCS: Internal Bayer CropScience "Occupational Exposure Standard"

Exposure controls

Personal protective equipment

In normal use and handling conditions please refer to the label and/or leaflet. In all other cases the following recommendations would apply.

Respiratory protection

When respirators are required, select NIOSH approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industry recommendations.

Hand protection

Chemical resistant nitrile rubber gloves

Eye protection

Safety glasses with side-shields

Skin and body protection

Wear long-sleeved shirt and long pants and shoes plus socks.

General protective measures

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and warm/tepid water.

Keep and wash PPE separately from other laundry.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

white



AQUA-RESLIN®

Version 2.0 / USA
102000004847

6/11

Revision Date: 02/11/2015
Print Date: 02/11/2015

Physical State	Liquid
Odor	characteristic
Odour Threshold	no data available
pH	4.9 - 6.0 at (20 °C)
Vapor Pressure	no data available
Vapor Density (Air = 1)	no data available
Density	ca. 1.02 g/cm ³ at 20 °C
Evaporation rate	no data available
Boiling Point	no data available
Melting / Freezing Point	no data available
Water solubility	soluble
Minimum Ignition Energy	not applicable
Decomposition temperature	no data available
Partition coefficient: n-octanol/water	not applicable
Viscosity	135 - 205 cps
Flash point	> 93 °C
Autoignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Explosivity	not applicable

SECTION 10: STABILITY AND REACTIVITY

Reactivity

Thermal decomposition	no data available
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Heat, flames and sparks. Extremes of temperature and direct sunlight.
Incompatible materials	no data available
Hazardous decomposition products	No decomposition products expected under normal conditions of use.



AQUA-RESLIN®

Version 2.0 / USA
102000004847

7/11
Revision Date: 02/11/2015
Print Date: 02/11/2015

SECTION 11: TOXICOLOGICAL INFORMATION

Exposure routes Ingestion, Inhalation

Immediate Effects

Eye May cause slight irritation.

Skin May cause slight irritation.

Ingestion Harmful if swallowed.

Information on toxicological effects

Acute oral toxicity LD50 (rat) 1,000 mg/kg

Acute inhalation toxicity LC50 (male/female combined rat) > 2.87 mg/l
Exposure time: 4 h

Acute dermal toxicity LD50 (rabbit) > 5,000 mg/kg

Skin irritation Slight irritation (rabbit)

Eye irritation Slight irritation (rabbit)

Sensitisation Non-sensitizing. (guinea pig)

Assessment repeated dose toxicity

Permethrin did not cause specific target organ toxicity in experimental animal studies.
Piperonyl butoxide did not cause specific target organ toxicity in experimental animal studies.

Assessment Mutagenicity

Permethrin was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.
Piperonyl butoxide was not mutagenic or genotoxic in a battery of in vitro and in vivo tests.

Assessment Carcinogenicity

Permethrin caused at high dose levels an increased incidence of tumours in mice in the following organ(s): liver, Lungs. The mechanism that triggers tumours in rodents is not relevant for the low exposures encountered under normal use conditions.
Piperonyl butoxide was not carcinogenic in lifetime feeding studies in rats and mice.

ACGIH

None.

NTP

None.

IARC

Permethrin	52645-53-1	Overall evaluation: 3
Piperonyl butoxide	51-03-6	Overall evaluation: 3

OSHA

None.

Assessment toxicity to reproduction



AQUA-RESLIN®

Version 2.0 / USA
10200004847

8/11

Revision Date: 02/11/2015
Print Date: 02/11/2015

Permethrin did not cause reproductive toxicity in a two-generation study in rats.
Piperonyl butoxide did not cause reproductive toxicity in a two-generation study in rats.

Assessment developmental toxicity

Permethrin did not cause developmental toxicity in rats and rabbits.
Piperonyl butoxide did not cause developmental toxicity in rats and rabbits.

Further information

Acute toxicity studies have not been performed on this product as formulated.
The toxicological data are based on the active ingredient.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity to fish	LC50 (Poecilia reticulata (guppy)) 0.0076 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient permethrin. LC50 (Cyprinodon variegatus (sheepshead minnow)) 3.94 mg/l Exposure time: 96 h The value mentioned relates to the active ingredient piperonyl butoxide.
Toxicity to aquatic invertebrates	EC50 (Daphnia magna (Water flea)) 0.00017 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient permethrin. EC50 (Daphnia magna (Water flea)) 0.51 mg/l Exposure time: 48 h The value mentioned relates to the active ingredient piperonyl butoxide.
Toxicity to aquatic plants	EC50 (Algae) 0.5 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient permethrin. EC50 (Algae) > 9.1 mg/l Exposure time: 72 h The value mentioned relates to the active ingredient piperonyl butoxide.
Biodegradability	Permethrin: ; not rapidly biodegradable Piperonyl butoxide: ; not rapidly biodegradable
Koc	Permethrin: Koc: 100000 Piperonyl butoxide: Koc: 399 - 830
Bioaccumulation	Permethrin: Bioconcentration factor (BCF) 300; Does not bioaccumulate. Piperonyl butoxide: ; Potential bioaccumulation
Mobility in soil	Permethrin: Immobile in soil Piperonyl butoxide: Moderately mobile in soils
Environmental precautions	Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark.



AQUA-RESLIN®

Version 2.0 / USA
102000004847

9/11
Revision Date: 02/11/2015
Print Date: 02/11/2015

Do not apply when weather conditions favor runoff or drift.
Do not contaminate surface or ground water by cleaning equipment or disposal of wastes, including equipment wash water.
Drift and runoff from treated areas may be hazardous to aquatic organisms in adjacent sites.
Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting the treatment area.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Product Pesticide, spray mixture or rinse water that cannot be used according to label instructions may be disposed of on site or at an approved waste disposal facility.

Contaminated packaging Triple rinse containers.
Puncture container to avoid re-use.
Dispose of empty container in a sanitary landfill or by incineration, or, if allowed by State/Provincial and local authorities, by burning.
If burned, stay out of smoke.
Follow advice on product label and/or leaflet.

RCRA Information Characterization and proper disposal of this material as a special or hazardous waste is dependent upon Federal, State and local laws and are the user's responsibility. RCRA classification may apply.

SECTION 14: TRANSPORT INFORMATION

49CFR Not dangerous goods / not hazardous material

IMDG

UN number **3082**
Class **9**
Packaging group **III**
Marine pollutant **YES**
Proper shipping name **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)**

IATA

UN number **3082**
Class **9**
Packaging group **III**
Environm. Hazardous Mark **YES**
Proper shipping name **ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (PERMETHRIN, PIPERONYL BUTOXIDE SOLUTION)**



AQUA-RESLIN®

Version 2.0 / USA
102000004847

10/11

Revision Date: 02/11/2015
Print Date: 02/11/2015

This transportation information is not intended to convey all specific regulatory information relating to this product. It does not address regulatory variations due to package size or special transportation requirements.

Freight Classification: INSECTICIDES OR FUNGICIDES, N.O.I., OTHER THAN POISON

SECTION 15: REGULATORY INFORMATION

EPA Registration No. 432-796

US Federal Regulations

TSCA list

Piperonyl butoxide	51-03-6
Naphtha (petroleum), heavy alkylate	64741-65-7
Fatty alcohol polyglycol ether	9004-98-2

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)
None.

SARA Title III - Section 302 - Notification and Information

None.

SARA Title III - Section 313 - Toxic Chemical Release Reporting

Permethrin	52645-53-1	1.0%
Piperonyl butoxide	51-03-6	1.0%

US States Regulatory Reporting

CA Prop65

This product does not contain any substances known to the State of California to cause cancer.

This product does not contain any substances known to the State of California to cause reproductive harm.

US State Right-To-Know Ingredients

Permethrin	52645-53-1	NJ, RI
Piperonyl butoxide	51-03-6	NJ, RI
Naphtha (petroleum), heavy alkylate	64741-65-7	CA, CT, MN

Canadian Regulations

Canadian Domestic Substance List

None.

Environmental

CERCLA

None.

Clean Water Section 307 Priority Pollutants

None.

Safe Drinking Water Act Maximum Contaminant Levels

Permethrin	52645-53-1
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International Regulations

European Inventory of Existing Commercial Substances (EINECS)

Permethrin	52645-53-1
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AQUA-RESLIN®

Version 2.0 / USA
102000004847

11/11

Revision Date: 02/11/2015
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EPA/FIFRA Information:

This chemical is a pesticide product registered by the 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, and for workplace labels of non-pesticide chemicals. Following is the hazard information required on the pesticide label:

Signal word: Caution!

Hazard statements: Harmful if swallowed.
Wash thoroughly with soap and water after handling.

SECTION 16: OTHER INFORMATION

NFPA 704 (National Fire Protection Association):

Health - 1 Flammability - 1 Instability - 0 Others - none

HMIS (Hazardous Materials Identification System, based on the Third Edition Ratings Guide)

Health - 1 Flammability - 1 Physical Hazard - 0 PPE -

0 = minimal hazard, 1 = slight hazard, 2 = moderate hazard, 3 = severe hazard, 4 = extreme hazard

Reason for Revision: Revised according to the current OSHA Hazard Communication Standard (29CFR1910.1200)

Revision Date: 02/11/2015

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