

**BAZETTA TOWNSHIP TRUSTEES
REGULAR MEETING MINUTES**

Date: July 6, 2015 at 7:00pm
Bazetta Township Administration Building
3372 State Route 5
Cortland, Ohio 44410

Present:
Vice Chairman Trustee Paul Hovis
Trustee Frank Parke
Chairman Trustee Ted Webb
Fiscal Officer Rita K. Drew

- Trustee Hovis reminded the assemblage of the Public Comment procedures

193-15 To accept the minutes from the June 15 Regular Meeting.

Motion: Trustee Hovis
Second: Trustee Webb
Vote: Trustee Hovis – Yes Trustee Parke - Abstain Trustee Webb - Yes

194-15 To authorize the Fiscal Officer to pay all outstanding invoices incurred and approve all warrants issued.

Motion: Trustee Hovis
Second: Trustee Parke
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

195-15 To authorize the Fiscal Officer to perform the following transfers.

*\$500.00 from 01-F-05 (General: Park Tools & Equipment) to 01-F-06 (General: Park Supplies)
\$5,000.00 from 10-A-15A (Fire: Future Retirement Expenses) to 10-A-10 (Fire: Repairs)
\$5,000.00 from 10-A-15A (Fire: Future Retirement Expenses) to 10-C-06 (Fire: EMS Repairs)
\$2,000.00 from 10-A-15A (Fire: Future Retirement Expenses) to 10-C-05 (Fire: EMS Supplies)
\$25,234.32 from 01-A-27 (General: Transfers) to 30-A-05 (OPWC Projects: Township Portion)
\$10,000.00 from 01 (General) to 05 (Cemetery)
\$10,000.00 from 01 (General) to 13 (Zoning)*

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

196-15 To authorize the Fiscal Officer to perform the following Supplemental Appropriations.

\$500.00 to 14-A-05A (Fire/EMS Training Center: Supplies)

Motion: Trustee Hovis
Second: Trustee Parke
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

197-15 To not request a hearing on the advisability of issuing a liquor control permit to Rajiman LLC dba Carters Market & Drive Thru.

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

198-15 To not request a hearing on the advisability of issuing a liquor control permit to Northwest Hydraulic Systems, Inc. dba Speedgate Bar & Grill.
Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

199-15 To authorize the Fiscal Officer to request an advance on the 2015 2nd Half Settlement from the Trumbull County Auditor.
Motion: Trustee Hovis
Second: Trustee Parke
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

200-15 To adopt the attached *Resolution to Proceed to Levy a Tax in Excess of the Ten Mill Limitation* (1.5 mill Current Expense Additional Levy).
Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

201-15 To adopt the attached *Resolution to Proceed to Levy a Tax in Excess of the Ten Mill Limitation* (0.6 mill Road & Bridge Renewal Levy).
Motion: Trustee Hovis
Second: Trustee Parke
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

202-15 To adopt the attached *Resolution to Proceed to Levy a Tax in Excess of the Ten Mill Limitation* (1.8 mill Police Renewal Levy).
Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

203-15 To rescind Board Resolution #156-15, which enacted the *Bazetta Township Social Media Policy*.
Motion: Trustee Hovis
Second: Trustee Parke
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

- Trustee Webb explained that the other two levies will be placed on the ballot at a later date

Correspondence (Copies available upon request):

- Letter from Rhonda Roberson regarding handicapped ramps on Mosquito Lake
- Invitation from Ohio Utilities Protection Service to attend their 2015 Annual Meeting and Reception
- Notice from Ohio Division of Liquor Control regarding a Hearing for Carters Market & Drive Thru
- 2014 Ohio Township Association Risk Management Authority (OTARMA) Annual Report
- Claim Form from Ohio Attorney General for Rock Salt Antitrust Litigation Settlement
- Notice from Ohio Division of Liquor Control regarding a Hearing for Speedgate Bar & Grill

Administration:

- Trustee Hovis stated that he and Assistant Road Superintendent Tempesta met with Valley Electric regarding complaints in Timber Creek and are awaiting a return contact from Valley Electric
- Trustee Parke said the Road Department is doing a good job keeping the ditches and culverts clear

Fire Department:

- See Attached Agenda & Report
- Chief Lewis stated the following
 - Thanked Firefighter/EMT Michael Wright for his assistance
 - Station #13 is currently closed due to a wild animal infestation that is due to be inspected on July 8th

204-15 To authorize an expenditure of \$1,270.14 for ten (10) tires for emergency vehicles from American Tire Distributors, to be paid from the Fire Fund.

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

205-15 To accept a \$3,500.00 grant from the Ohio Department of Public Safety Division.

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

Police Department:

- See Attached Agenda

206-15 To hire Michael L. Floravit II as a Reserve Officer, pending passage of psychological screening, effective immediately.

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

207-15 To authorize Chief Hovis to sell the following vehicles obtained via the Police Department Impound Lot, at a sale price not to exceed \$2,500 per ORC §4513.61.

Schwinn OCC Chopper Bicycle (No VIN)

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

208-15 To accept the attached list of donated items from Wal-Mart and authorize Chief Hovis to trade said items to Standard Law, with the proceeds to go towards the purchase of two (2) bullet proof vests.

Motion: Trustee Parke
Second: Trustee Hovis
Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

Road Department:

- Assistant Road Superintendent Tempesta reported that the department will be getting roughly \$2,100.00 back from the lawsuit against Morton Salt

Planning Director, Zoning Inspector & Code Enforcement Officer:

- Zoning Inspector Mills reported the following
 - Attended two meetings
 - Apologized for not getting back to people more quickly
 - Said he knew he was a bit behind

- Permits have been moving forward
- Nuisance abatements have been moving as well

Zoning Commission, Zoning Board of Appeals & Code Enforcement Board of Appeals:

- Nothing to Report

Parks & Recreation Board:

- Nothing to Report

Safety Committee:

- Nothing to Report

Health Insurance Committee:

- Nothing to Report

209-15 To accept the low bid of \$2,500.00 from Tanglewood Trees to chip brush at 2997 Warren-Meadville Road, to be paid from the Fire Fund.

Motion: Trustee Parke

Second: Trustee Hovis

Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

Asked to be placed on the Agenda:

- Samantha Merrill to discuss mosquito spraying program
 - Passed out the attached informational packets to the Trustees
 - Spoke with the company that does Bazetta's mosquito spraying
 - Did some research on the chemicals being used
 - Neurotoxins
 - Possible carcinogens
 - Concerned about the health effects on humans and animals
 - Would like the Trustees to consider using more ecologically friendly alternatives
 - Volunteered to look into other options
- Betty Kistler, Norma Canfield, and Stephanie Markey to discuss nuisance abatement
 - Problems with a neighboring property not being mowed - Same problem as last year
 - Zoning Inspector Mills said the following
 - He will contact the property owner
 - Cannot force the owner to mow the field in question
 - The township can control frontage and some back property, but cannot control a field
 - Problem here is that this Bazetta Township property abuts City of Cortland property
 - Just because the property seems to be in the City or a city, it is still in the Township where the nuisance abatement rules are different
 - Restated that he will contact the property owner
 - Also said he would contact Trumbull County Soil and Water to see if any noxious vegetation is present
- Dan Deluca to discuss Planet Aid Donation bins
 - Asked permission to put a clothing and shoe recycling bin in our recycling area
 - Passed out pamphlets to Trustees
 - Would prefer to put them at recycling centers
 - Answered Trustee questions

- No cost and no fees
- Bins are typically emptied weekly, but the schedule can be adjusted as needed
- Planet Aid carries liability insurance on the bins
- Willing to work with the township on a location

Public Comment:

- Jane Lewis of Durst Clagg Road
 - Asked about the Tanglewood Tree resolution
 - Knew the township already paid do have the trees taken down
 - Questioned whether the bid for taking trees down included grinding
 - Trustee Webb said original bids were for tree cutting only

- Jane Lewis of Durst Clagg Road
 - Asked if the township will no longer have a social media policy
 - Trustee Webb said the Trustees will work with employees to create a new one

210-15 To adjourn the meeting at 7:50pm.

Motion: Trustee Hovis

Second: Trustee Parke

Vote: Trustee Hovis – Yes Trustee Parke - Yes Trustee Webb - Yes

Attested by: Fiscal Officer Rita K. Drew

Dated: 07-17-15

Approved by: Chairman Trustee Ted Webb

Dated: 7/20/15

PENDING WARRANT REPORT
Bazetta Township [2015]

Date: 07/06/15

Warrant Number	Warrant Amount	Voucher Number	Payee	Purpose
25282	460.30	VW 1	The Huntington National Bank	Truck loan
25283	50.00	VM25282	American Red Cross	Supplies
25284	185.50	VM25283	Agnew Lawn & Garden	Supplies
25285	1000.00	VM25284	Alexander's Pest Control, Inc.	Mosquito Spray
25286	354.65	VM25285	Anthem BCBS	EMS Refund
25287	183.83	VM25286	Anthem	EMS Refund
25288	362.70	VM25287	Applegate Furniture	Supplies
25289	990.00	VM25288	Astro-Clean	Service
25290	800.00	VM25289	Attorney Mark S. Finamore	Service
25291	19.20	VM25290	Art&T Mobility	Service
25292	439.44	VM25291	Business Card	Supplies
25293	588.00	VM25292	BE Solutions	Supplies
25294	25.00	VM25293	Curtis Lonsbrough	Mo Admin Fees
25295	111.03	VM25294	City of Warren, Utility Services	Zoning July 1 Qtrly Mtg
25296	100.00	VM25295	Carolyn Nowak	Service
25297	1550.00	VM25296	Cody's Law Service, LLC	Gazebo Deposit Refund
25298	395.00	VM25297	Dennis K. Lewis	Service
25299	1535.21	VM25298	Delta Dental	Training Reimbursement
25300	1000.00	VM25299	Dennis K. Lewis	Insurance
25301	439.99	VM25300	Graybar Financial Services, LLC	BWC Management
25302	167.50	VM25301	Hanley Print & Promotions	Service
25303	25.00	VM25302	Jack Hineman	Supplies
25304	1000.00	VM25303	Kristopher W. Parke	Zoning Commission July 1 Qtrly Mtg
25305	341.91	VM25304	Medical Mutual	2nd half BWC Management
25306	55.79	VM25305	Mark Thomas Ford	EMS Refund
25307	1000.00	VM25306	Michael J. Hovis	Supplies
25308	141.38	VM25307	Michael Mannelia	2nd Half BWC Management
25309	777.00	VM25308	Ohio Billing, Inc.	June Opt Out
25310	1760.08	VM25309	Ohio Edison	EMS Trip Submissions
25311	50.00	VM25310	Ohio Association of Public Treasurers	Service
25312	13188.60	VM25311	Ohio Insurance Services Agency	Membership Dues
25313	1375.03	VM25312	Ohio Edison	Insurance
25314	177.98	VM25313	Purchase Power	Street Lighting
25315	25.00	VM25314	Rita Benoit	Postage
25316	25234.32	VM25315	Shelly & Sands, Inc.	Zoning Commission July 1 Qtrly Mtg
25317	300.00	VM25316	Schultz Towing, Inc.	Millennium Blvd Resurfacing Project
25318	211.63	VM25317	Standard Environmental Service, Inc.	TOWS
25319	324.80	VM25318	Sunburst Insurance Company RD	Service
25320	17.84	VM25319	Sunrise Springs Water Co.	Insurance
25321	202.69	VM25320	Trumbull County Water And Sewer	Service
25322	373.23	VM25321	Time Warner Cable-Northeast	Service
25323	54.97	VM25322	Tractor Supply Credit Plan	Service
25324	150.00	VM25323	Treasurer, State of Ohio	Supplies
25325	3208.88	VM25324	Trumbull County 911	FF Dependents Fund Assessment
25326	50.00	VM25325	Treasurer State of Ohio	911 Service
25327	812.00	VM25326	Vance Outdoors, Inc.	Service
25327	496.16	VM25327	Vision Service Plan--(OH)	Supplies
				Insurance

PENDING WARRANT REPORT
 Bazetta Township [2015]

Date: 07/06/15

Warrant Number	Warrant Amount	Voucher Number	Payee	Purpose
25328	398.72	VM253328	Verizon Wireless	Service
25329	25.00	VM253329	Walter Maycher	Zoning Commission July 1 Qtrly Mtg
25330	20.00	VM253330	Youngstown/Warren Regional Chamber	Member Registration
25331	445.00	VM253331	Zarlinski Landscape Services, LLC	Supplies
25332	48.48	VM253332	Automotive Distributors	PAYMENT
25333	2051.84	VM253333	BE SOLUTIONS	PAYMENT
25334	33.17	VM253334	Bortnick Tractor Sales, Inc.	PAYMENT
25335	13.58	VM253335	Carter Lumber	PAYMENT
25336	141.17	VM253336	DOMINION EAST OHIO	PAYMENT
25337	161.69	VM253337	FUSION NETWORK BILLING SYSTEM	PAYMENT
25338	29.97	VM253338	HOME DEPOT CREDIT SERVICES	PAYMENT
25339	75.00	VM253339	ON DEMAND DRUG TESTING	PAYMENT
25340	54.00	VM253340	TRUMBULL COUNTY LEGAL NEWS	PAYMENT
25341	4478.06	VM253341	MEX BANK	PAYMENT
Total Amount of Pending Warrants				
70087.32				

NOTICE TO LEGISLATIVE
AUTHORITY

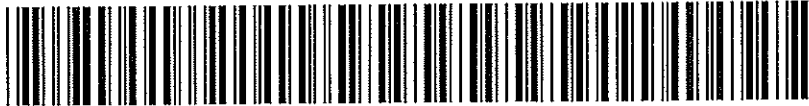
OHIO DIVISION OF LIQUOR CONTROL
6606 TUSSING ROAD, P.O. BOX 4005
REYNOLDSBURG, OHIO 43068-9005
(614)644-2360 FAX(614)644-3166

TO

7167250		TRFO	RAJIMAN LLC
PERMIT NUMBER		TYPE	DBA CARTERS MARKET & DRIVE THRU
10	01	2014	1ST FL ONLY
ISSUE DATE			959 WILSON SHARPSVILLE RD
06	09	2015	BAZETTA TWP
FILING DATE			CORTLAND OH 44410
C1	C2	D6	
PERMIT CLASSES			
78	904	C	F14251
TAX DISTRICT			RECEIPT NO.

FROM 06/11/2015

1296480			CARTERS MARKET & DRIVE THRU LLC
PERMIT NUMBER		TYPE	DBA CARTERS MARKET & DRIVE THRU
10	01	2014	1ST FL ONLY
ISSUE DATE			959 WILSON SHARPSVILLE RD
06	09	2015	BAZETTA TWP
FILING DATE			CORTLAND OH 44410
C1	C2	D6	
PERMIT CLASSES			
78	904		
TAX DISTRICT			RECEIPT NO.



MAILED 06/11/2015

RESPONSES MUST BE POSTMARKED NO LATER THAN. 07/13/2015

IMPORTANT NOTICE

PLEASE COMPLETE AND RETURN THIS FORM TO THE DIVISION OF LIQUOR CONTROL
WHETHER OR NOT THERE IS A REQUEST FOR A HEARING.
REFER TO THIS NUMBER IN ALL INQUIRIES C TRFO 7167250

(TRANSACTION & NUMBER)

(MUST MARK ONE OF THE FOLLOWING)

WE REQUEST A HEARING ON THE ADVISABILITY OF ISSUING THE PERMIT AND REQUEST THAT
THE HEARING BE HELD IN OUR COUNTY SEAT. IN COLUMBUS.

WE DO NOT REQUEST A HEARING.
DID YOU MARK A BOX? IF NOT, THIS WILL BE CONSIDERED A LATE RESPONSE.

PLEASE SIGN BELOW AND MARK THE APPROPRIATE BOX INDICATING YOUR TITLE:

07-10-15

(Signature)

(Title)- Clerk of County Commissioner

(Date)

Clerk of City Council

Township Fiscal Officer

BAZETTA TOWNSHIP TRUSTEES
ATTN TOWNSHIP FISCAL OFFICER
3372 STATE ROUTE 5 NE
CORTLAND OHIO 44410

7167250 PERMIT NBR
RAJIMAN LLC
DBA CARTERS MARKET & DRIVE THRU
1ST FL ONLY
959 WILSON SHARPSVILLE RD
BAZETTA TWP
CORTLAND OH 44410

✶ INDERJEET KAUR

06/09/2015 ACTIVE

MAN-MBR

PA2-KEY = END SESSION, CLEAR-KEY = END OPTION, ENTER-KEY = TO CONTINUE

NOTICE TO LEGISLATIVE
AUTHORITY

OHIO DIVISION OF LIQUOR CONTROL
6606 TUSSING ROAD, P.O. BOX 4005
REYNOLDSBURG, OHIO 43068-9005
(614)644-2360 FAX(614)644-3166

TO

6444956		TRFO	NORTHWEST HYDRAULIC SYSTEMS INC	
PERMIT NUMBER		TYPE	DBA SPEEDGATE BAR & GRILL	
10	01	2014		
ISSUE DATE		375 WILSON SHARPSVILLE RD		
06	30	2015		
FILING DATE		BAZETTA TWP		
D1		WARREN OH 44481		
PERMIT CLASSES				
78	904	C	F14356	
TAX DISTRICT			RECEIPT NO.	

FROM 07/02/2015

7209445			RAYMOND EDWARD RATELL	
PERMIT NUMBER		TYPE	DBA LONGVIEW GOLF COURSE	
10	01	2014		
ISSUE DATE		375 SR305 & GOLF COURSE		
06	30	2015		
FILING DATE		BAZETTA TWP		
D1		WARREN OHIO 44481		
PERMIT CLASSES				
78	904			
TAX DISTRICT			RECEIPT NO.	



MAILED 07/02/2015

RESPONSES MUST BE POSTMARKED NO LATER THAN. 08/03/2015

IMPORTANT NOTICE

PLEASE COMPLETE AND RETURN THIS FORM TO THE DIVISION OF LIQUOR CONTROL
WHETHER OR NOT THERE IS A REQUEST FOR A HEARING.

REFER TO THIS NUMBER IN ALL INQUIRIES

C TRFO 6444956

(TRANSACTION & NUMBER)

(MUST MARK ONE OF THE FOLLOWING)

WE REQUEST A HEARING ON THE ADVISABILITY OF ISSUING THE PERMIT AND REQUEST THAT
THE HEARING BE HELD IN OUR COUNTY SEAT. IN COLUMBUS.

WE DO NOT REQUEST A HEARING.
DID YOU MARK A BOX? IF NOT, THIS WILL BE CONSIDERED A LATE RESPONSE.

PLEASE SIGN BELOW AND MARK THE APPROPRIATE BOX INDICATING YOUR TITLE:

07-10-15

(Signature)

(Title) - Clerk of County Commissioner

(Date)

Clerk of City Council

Township Fiscal Officer

BAZETTA TOWNSHIP TRUSTEES
ATTN TOWNSHIP FISCAL OFFICER
3372 STATE ROUTE 5 NE
CORTLAND OHIO 44410

PERMIT NUMBER (CORPORATION) 6444956
NORTHWEST HYDRAULIC SYSTEMS INC
DBA SPEEDGATE BAR & GRILL
375 WILSON SHARPSVILLE RD
BAZETTA TWP
WARREN OH 44481

F.T.I. NUMBER 00-0000000
STATUS (ACTIVE OR INACTIVE) ACTIVE
SHARES OUTSTANDING 250.00
ACTIVE DATE 06/30/15
INACTIVE DATE
EXCEPTION CODE TEXT
STOCK TRANSFER CODE TEXT AND DATE
RAYMOND E RATELL JR

250.00 06/30/15 ACTIVE PRESIDENT

**RESOLUTION TO PROCEED TO LEVY A TAX
IN EXCESS OF THE TEN MILL LIMITATION**

Resolution #200-15 (Additional Current Expense Tax Levy 1.5 mills)

The Board of Township Trustees of Bazetta Township, Trumbull County, Ohio met in Regular Session on the 6th day of July, 2015, at the office of said Board, with the following members present:

Trustee Paul Hovis
Trustee Frank Parke
Trustee Ted Webb

Trustee Parke moved the adoption of the following resolution:

WHEREAS, on the 15th day of June, 2015 the Board of Trustees passed a resolution declaring the necessity, for the purposes set forth in ORC §5705.03, ORC §5705.19 (A), and ORC §5705.191 at a rate not exceeding 1.5 mill for each one dollar of valuation, which amounts to \$0.15 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2015 collection year beginning 2016; and

WHEREAS, the Trumbull County Auditor has certified to the Board of Trustees that the dollar amount of revenue to be generated by the tax levy during the first year of collection is \$210,542.00, based upon the current assessed valuation of the Township of \$140,361,060.

NOW THEREFORE BE IT RESOLVED by the Board of Trustees of Bazetta Township, Trumbull County, State of Ohio, all members elected thereto concurring that the Board desires to proceed with the submission of the question of an additional tax levy in excess of the ten mill limitation for the benefit of Bazetta Township, pursuant to under ORC §5705.03, ORC §5705.19 (A), and ORC §5705.191, for the current expenses of said township, at a rate not exceeding 1.5 mill for each one dollar of valuation, which amounts to \$0.15 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2015 collection year beginning 2016.

BE IT FURTHER RESOLVED that the provisions of said tax levy be submitted to the electors of said Bazetta Township, in the general election to be held on the 3rd of November, 2015; and

BE IT FURTHER RESOLVED that this tax levy be submitted to the electors under the authority of said Ohio Revised Code §5705.03, ORC §5705.19 (A), and ORC §5705.191; and

BE IT FURTHER RESOLVED that the Fiscal Officer of the Board of Township Trustees of Bazetta Township is hereby directed to certify a copy of the Resolution to the Board of Elections, Trumbull County, Ohio, not less than ninety days prior to the election and notify said Board of Elections to cause notice of election on the question of levying said tax to be given as required by law.

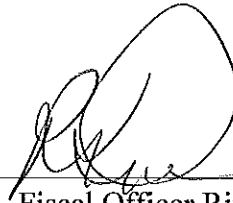
Trustee Hovis seconded the motion and the roll being called upon its adoption the vote resulted as follows:

Trustee Hovis - Yes

Trustee Parke - Yes

Trustee Webb - Yes

Adopted the 6th day of July, 2015.

A handwritten signature in black ink, appearing to read 'Rita K. Drew', is written over a horizontal line. The signature is stylized and cursive.

Fiscal Officer Rita K. Drew

**RESOLUTION TO PROCEED TO LEVY A TAX
IN EXCESS OF THE TEN MILL LIMITATION**

Resolution #201-15 (Renewal Road & Bridge Tax Levy 0.6 mills)

The Board of Township Trustees of Bazetta Township, Trumbull County, Ohio met in Regular Session on the 6th day of July, 2015, at the office of said Board, with the following members present:

Trustee Paul Hovis
Trustee Frank Parke
Trustee Ted Webb

Trustee Hovis moved the adoption of the following resolution:

WHEREAS, on the 15th day of June, 2015 the Board of Trustees passed a resolution declaring the necessity, for the purposes set forth in ORC §5705.03, ORC §5705.19 (G), and ORC §5705.191 at a rate not exceeding 0.6 mill for each one dollar of valuation, which amounts to \$0.06 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2016 collection year beginning 2017; and

WHEREAS, the Trumbull County Auditor has certified to the Board of Trustees that the dollar amount of revenue to be generated by the tax levy during the first year of collection is \$86,060.00, based upon the current assessed valuation of the Township of \$140,361,060.

NOW THEREFORE BE IT RESOLVED by the Board of Trustees of Bazetta Township, Trumbull County, State of Ohio, all members elected thereto concurring that the Board desires to proceed with the submission of the question of a renewal tax levy in excess of the ten mill limitation for the benefit of Bazetta Township, pursuant to under ORC §5705.03, ORC §5705.19 (G), and ORC §5705.191, for the general construction, reconstruction, resurfacing, and repair of streets, roads, and bridges, at a rate not exceeding 0.6 mill for each one dollar of valuation, which amounts to \$0.06 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2016 collection year beginning 2017.

BE IT FURTHER RESOLVED that the provisions of said tax levy be submitted to the electors of said Bazetta Township, in the general election to be held on the 3rd of November, 2015; and

BE IT FURTHER RESOLVED that this tax levy be submitted to the electors under the authority of said Ohio Revised Code §5705.03, ORC §5705.19 (G), and ORC §5705.191; and

BE IT FURTHER RESOLVED that the Fiscal Officer of the Board of Township Trustees of Bazetta Township is hereby directed to certify a copy of the Resolution to the Board of Elections, Trumbull County, Ohio, not less than ninety days prior to the election and notify said Board of Elections to cause notice of election on the question of levying said tax to be given as required by law.

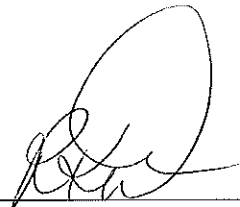
Trustee Parke seconded the motion and the roll being called upon its adoption the vote resulted as follows:

Trustee Hovis - Yes

Trustee Parke - Yes

Trustee Webb - Yes

Adopted the 6th day of July, 2015.

A handwritten signature in black ink, appearing to read 'Rita K. Drew', is written over a horizontal line. The signature is stylized and cursive.

Fiscal Officer Rita K. Drew

**RESOLUTION TO PROCEED TO LEVY A TAX
IN EXCESS OF THE TEN MILL LIMITATION**

Resolution #202-15 (Renewal Police Tax Levy 1.8 mills)

The Board of Township Trustees of Bazetta Township, Trumbull County, Ohio met in Regular Session on the 6th day of July, 2015, at the office of said Board, with the following members present:

Trustee Paul Hovis

Trustee Frank Parke

Trustee Ted Webb

Trustee Parke moved the adoption of the following resolution:

WHEREAS, on the 15th day of June, 2015 the Board of Trustees passed a resolution declaring the necessity, for the purposes set forth in ORC §5705.03, ORC §5705.19 (J), and ORC §5705.191 at a rate not exceeding 1.8 mill for each one dollar of valuation, which amounts to \$0.18 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2016 collection year beginning 2017; and

WHEREAS, the Trumbull County Auditor has certified to the Board of Trustees that the dollar amount of revenue to be generated by the tax levy during the first year of collection is \$233,760.00, based upon the current assessed valuation of the Township of \$140,361,060.

NOW THEREFORE BE IT RESOLVED by the Board of Trustees of Bazetta Township, Trumbull County, State of Ohio, all members elected thereto concurring that the Board desires to proceed with the submission of the question of a renewal tax levy in excess of the ten mill limitation for the benefit of Bazetta Township, pursuant to under ORC §5705.03, ORC §5705.19 (J), and ORC §5705.191, for providing and maintaining motor vehicles, communications, and other equipment used directly in the operation of a police department, or the payment of salaries of permanent police personnel, including the payment of police officer employer's contribution required under ORC §742.33 or the payment of the costs incurred by townships as a result of contracts made with other political subdivisions in order to obtain police protection, or the provision of ambulance or emergency medical services operated by a police department, at a rate not exceeding 1.8 mill for each one dollar of valuation, which amounts to \$0.18 for each one hundred dollars of valuation for a period of 5 years, commencing tax year 2016 collection year beginning 2017.

BE IT FURTHER RESOLVED that the provisions of said tax levy be submitted to the electors of said Bazetta Township, in the general election to be held on the 3rd of November, 2015; and

BE IT FURTHER RESOLVED that this tax levy be submitted to the electors under the authority of said Ohio Revised Code §5705.03, ORC §5705.19 (J), and ORC §5705.191; and

BE IT FURTHER RESOLVED that the Fiscal Officer of the Board of Township Trustees of Bazetta Township is hereby directed to certify a copy of the Resolution to the Board of Elections, Trumbull County, Ohio, not less than ninety days prior to the election and notify said Board of Elections to cause notice of election on the question of levying said tax to be given as required by law.

Trustee Hovis seconded the motion and the roll being called upon its adoption the vote resulted as follows:

Trustee Hovis - Yes
Trustee Parke - Yes
Trustee Webb - Yes

Adopted the 6th day of July, 2015.



Fiscal Officer Rita K. Drew

BAZETTA TWP. FIRE/EMS

Chief Dennis Lewis

Chief's Office

INTEROFFICE MEMORANDUM

Date: 6/30/2015
To: Trustees
From: Chief Dennis Lewis
Re: July 6, 2015 Trustee's
Cc: File, Fiscal Officer

Trustee Hovis – Trustee Parke – Trustee Webb

1. Requesting a supplemental appropriation from 14-05-A for the amount \$500.00.
2. Requesting emergency expenditure of \$1270.14 for 10 tires from ATD (American Tire Distributors, six tires were for an ambulance and 4 tires were for the expedition. To be paid from the Fire Fund.
3. Requesting the Trustees to accept a \$3,500.00 grant from the Ohio Department of Public Safety Division of EMS. *Would like to Thank FF/Medic Mike Wright as he prepared the grant this year for a job well done. This is a 100% reimbursed grant.*

Professionally,
Dennis Lewis
Fire Chief

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
1 Fire				
131 Passenger vehicle fire	1	1.21%	\$0	0.00%
142 Brush or brush-and-grass mixture fire	1	1.21%	\$0	0.00%
	<u>2</u>	<u>2.43%</u>	<u>\$0</u>	<u>0.00%</u>
2 Overpressure Rupture, Explosion, Overheat(no fire)				
251 Excessive heat, scorch burns with no	1	1.21%	\$0	0.00%
	<u>1</u>	<u>1.21%</u>	<u>\$0</u>	<u>0.00%</u>
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	57	69.51%	\$0	0.00%
322 Motor vehicle accident with injuries	2	2.43%	\$0	0.00%
324 Motor Vehicle Accident with no injuries	2	2.43%	\$0	0.00%
	<u>61</u>	<u>74.39%</u>	<u>\$0</u>	<u>0.00%</u>
4 Hazardous Condition (No Fire)				
411 Gasoline or other flammable liquid spill	1	1.21%	\$0	0.00%
444 Power line down	2	2.43%	\$0	0.00%
	<u>3</u>	<u>3.65%</u>	<u>\$0</u>	<u>0.00%</u>
5 Service Call				
553 Public service	5	6.09%	\$0	0.00%
561 Unauthorized burning	1	1.21%	\$0	0.00%
	<u>6</u>	<u>7.31%</u>	<u>\$0</u>	<u>0.00%</u>
6 Good Intent Call				
611E Dispatched & cancelled en route (EMS /	1	1.21%	\$0	0.00%
611F Dispatched & cancelled en route (Fire /	2	2.43%	\$0	0.00%
651 Smoke scare, odor of smoke	1	1.21%	\$0	0.00%
671 HazMat release investigation w/no HazMat	1	1.21%	\$0	0.00%
	<u>5</u>	<u>6.09%</u>	<u>\$0</u>	<u>0.00%</u>
7 False Alarm & False Call				
733 Smoke detector activation due to	3	3.65%	\$0	0.00%
743 Smoke detector activation, no fire -	1	1.21%	\$0	0.00%

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
7 False Alarm & False Call	4	4.87%	\$0	0.00%

Total Incident Count: 82

Total Est Loss: \$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
and District = "11 "

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
1 Fire				
142 Brush or brush-and-grass mixture fire	1	2.70%	\$0	0.00%
	<u>1</u>	<u>2.70%</u>	<u>\$0</u>	<u>0.00%</u>
2 Overpressure Rupture, Explosion, Overheat(no fire)				
251 Excessive heat, scorch burns with no	1	2.70%	\$0	0.00%
	<u>1</u>	<u>2.70%</u>	<u>\$0</u>	<u>0.00%</u>
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	23	62.16%	\$0	0.00%
324 Motor Vehicle Accident with no injuries	1	2.70%	\$0	0.00%
	<u>24</u>	<u>64.86%</u>	<u>\$0</u>	<u>0.00%</u>
4 Hazardous Condition (No Fire)				
411 Gasoline or other flammable liquid spill	1	2.70%	\$0	0.00%
444 Power line down	2	5.40%	\$0	0.00%
	<u>3</u>	<u>8.10%</u>	<u>\$0</u>	<u>0.00%</u>
5 Service Call				
553 Public service	3	8.10%	\$0	0.00%
561 Unauthorized burning	1	2.70%	\$0	0.00%
	<u>4</u>	<u>10.81%</u>	<u>\$0</u>	<u>0.00%</u>
6 Good Intent Call				
671 HazMat release investigation w/no HazMat	1	2.70%	\$0	0.00%
	<u>1</u>	<u>2.70%</u>	<u>\$0</u>	<u>0.00%</u>
7 False Alarm & False Call				
733 Smoke detector activation due to	3	8.10%	\$0	0.00%
	<u>3</u>	<u>8.10%</u>	<u>\$0</u>	<u>0.00%</u>
Total Incident Count:	37		Total Est Loss:	\$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
 and District = "11 " and Alarm Time Between
 "12:00" And "20:00"

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
2 Overpressure Rupture, Explosion, Overheat(no fire)				
251 Excessive heat, scorch burns with no	1	6.66%	\$0	0.00%
	1	6.66%	\$0	0.00%
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	7	46.66%	\$0	0.00%
	7	46.66%	\$0	0.00%
4 Hazardous Condition (No Fire)				
444 Power line down	2	13.33%	\$0	0.00%
	2	13.33%	\$0	0.00%
5 Service Call				
553 Public service	2	13.33%	\$0	0.00%
561 Unauthorized burning	1	6.66%	\$0	0.00%
	3	20.00%	\$0	0.00%
7 False Alarm & False Call				
733 Smoke detector activation due to	2	13.33%	\$0	0.00%
	2	13.33%	\$0	0.00%
Total Incident Count:	15		Total Est Loss:	\$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
 and District = "11 " and Alarm Time Not
 Between "12:00" And "20:00"

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
1 Fire				
142 Brush or brush-and-grass mixture fire	1	4.54%	\$0	0.00%
	1	4.54%	\$0	0.00%
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	16	72.72%	\$0	0.00%
324 Motor Vehicle Accident with no injuries	1	4.54%	\$0	0.00%
	17	77.27%	\$0	0.00%
4 Hazardous Condition (No Fire)				
411 Gasoline or other flammable liquid spill	1	4.54%	\$0	0.00%
	1	4.54%	\$0	0.00%
5 Service Call				
553 Public service	1	4.54%	\$0	0.00%
	1	4.54%	\$0	0.00%
6 Good Intent Call				
671 HazMat release investigation w/no HazMat	1	4.54%	\$0	0.00%
	1	4.54%	\$0	0.00%
7 False Alarm & False Call				
733 Smoke detector activation due to	1	4.54%	\$0	0.00%
	1	4.54%	\$0	0.00%

Total Incident Count: 22

Total Est Loss: \$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
and District = "13 "

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
1 Fire				
131 Passenger vehicle fire	1	2.56%	\$0	0.00%
	<u>1</u>	<u>2.56%</u>	<u>\$0</u>	<u>0.00%</u>
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	31	79.48%	\$0	0.00%
322 Motor vehicle accident with injuries	2	5.12%	\$0	0.00%
324 Motor Vehicle Accident with no injuries	1	2.56%	\$0	0.00%
	<u>34</u>	<u>87.17%</u>	<u>\$0</u>	<u>0.00%</u>
5 Service Call				
553 Public service	2	5.12%	\$0	0.00%
	<u>2</u>	<u>5.12%</u>	<u>\$0</u>	<u>0.00%</u>
6 Good Intent Call				
651 Smoke scare, odor of smoke	1	2.56%	\$0	0.00%
	<u>1</u>	<u>2.56%</u>	<u>\$0</u>	<u>0.00%</u>
7 False Alarm & False Call				
743 Smoke detector activation, no fire -	1	2.56%	\$0	0.00%
	<u>1</u>	<u>2.56%</u>	<u>\$0</u>	<u>0.00%</u>
Total Incident Count:	39		Total Est Loss:	\$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
 and District = "13 " and Alarm Time Between
 "12:00" And "20:00"

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
1 Fire				
131 Passenger vehicle fire	1	4.16%	\$0	0.00%
	<u>1</u>	<u>4.16%</u>	<u>\$0</u>	<u>0.00%</u>
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	17	70.83%	\$0	0.00%
322 Motor vehicle accident with injuries	1	4.16%	\$0	0.00%
324 Motor Vehicle Accident with no injuries	1	4.16%	\$0	0.00%
	<u>19</u>	<u>79.16%</u>	<u>\$0</u>	<u>0.00%</u>
5 Service Call				
553 Public service	2	8.33%	\$0	0.00%
	<u>2</u>	<u>8.33%</u>	<u>\$0</u>	<u>0.00%</u>
6 Good Intent Call				
651 Smoke scare, odor of smoke	1	4.16%	\$0	0.00%
	<u>1</u>	<u>4.16%</u>	<u>\$0</u>	<u>0.00%</u>
7 False Alarm & False Call				
743 Smoke detector activation, no fire -	1	4.16%	\$0	0.00%
	<u>1</u>	<u>4.16%</u>	<u>\$0</u>	<u>0.00%</u>

Total Incident Count: 24

Total Est Loss: \$0

BAZETTA

Incident Type Report (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}
and District = "13 " and Alarm Time Not
Between "12:00" And "20:00"

Incident Type	Count	Pct of Incidents	Total Est Loss	Pct of Losses
3 Rescue & Emergency Medical Service Incident				
321 EMS call, excluding vehicle accident with	13	92.85%	\$0	0.00%
322 Motor vehicle accident with injuries	1	7.14%	\$0	0.00%
	<u>14</u>	<u>100.00%</u>	<u>\$0</u>	<u>0.00%</u>

Total Incident Count: 14

Total Est Loss: \$0

BAZETTA

Aid Responses by Department (Summary)

Alarm Date Between {06/01/2015} And {06/30/2015}

Type of Aid	Count
STA. 12 CORTLAND FIRE DEPARTMENT	
Mutual aid given	1
Automatic aid given	1
	<hr/>
	2
STA. 17 BRISTOL	
Automatic aid given	1
	<hr/>
	1
STA. 30 HOWLAND	
Automatic aid given	1
	<hr/>
	1
STA. 32 HOWLAND	
Mutual aid received	1
	<hr/>
	1
STA. 38 MECCA FIRE DEPARTMENT	
Mutual aid given	1
	<hr/>
	1

BAZETTA

Inspections by Type

Date Completed Between {06/01/2015} And
{06/30/2015}

Date	Time	Occupancy	Hrs	Fee
200 INSPECTION - General				
06/14/2015	12:57	ALLS01 ALL SOULS CEMETARY OFFICE 3823 BAZETTA RD NE/RD	0.89	
06/14/2015	09:04	CART01 CARTER'S MARKET 959 STATE ROUTE 305 NE	0.09	
06/14/2015	09:39	FINL01 FINLEY'S FLOWERS 2886 NILES CORTLAND RD NE	0.42	
06/14/2015	13:57	MOSQ01 MOSQUITO STATE PARK 1439 STATE ROUTE 305 NE	0.17	
06/14/2015	11:07	SAND01 SANDY'S TIRES 2380 ELM RD NE	0.94	
06/14/2015	10:29	AUTU02 Autumn Addiction Archery 3278 ELM RD NE	0.17	
06/14/2015	10:29	FARM04 Farmers Insurance Group 3578 NILES CORTLAND RD NE	0.03	
06/14/2015	11:21	HEAT01 HEATHERWOOD LANDSCAPE INC. 2396 ELM RD NE	0.14	
06/14/2015	10:18	TAMM01 TAMMER WINN CORPORATION (GOLF COURSE) 2940 NILES CORTLAND RD NE	0.43	
06/08/2015	09:48	AUTU01 Big blue trucking, Inc 518 PERKINS JONES RD NE/WARREN, OH 44483	0.02	
06/08/2015	09:56	PERK01 PERKINS RESTAURANT 3870 ELM RD NE	0.05	
06/14/2015	10:45	ALLS04 Allstate 3018 STATE ROUTE 5 /Unit A	0.13	
06/09/2015		BOBL01 BOB LUSCHER CONSTRUCTION 2342 MCCLEARY JACOBY RD NE	0.00	
06/09/2015		KATI01 Katies Corner 3260 STATE ROUTE 5	0.00	
06/09/2015		MURP02 MURPHY USA 2021 MILLENNIUM BLVD NE	0.00	
Total Activities for Type: 15			3.48	

Grand Total Activities: 15 Grand Totals: 3.48 0.00

Police Department Agenda for Monday July 6, 2015 Trustee Meeting

Thu 7/2/2015 1:16 PM

From: Michael Hovis

To: rdrew@bazettatwp.org

Cc: fparke@bazettatwp.org



Rita,

The following will be the agenda for the police department:

1. To hire Michael L. Floravit II as a Reserve Officer effective immediately pending passage of his psychological and drug testing.
2. To authorize the sale of a Schwinn OCC Chopper bicycle with engine from the impound lot. It does not have any serial numbers.
3. To accept the following items as a donation from Walmart (Attached) and authorize them to be traded to Standard Law Enforcement Supply Company.
- 4.

Michael J. Hovis, Chief of Police

Bazetta Township Police Department

2671 McCleary Jacoby Rd.

Cortland, Ohio 44410

PH:330-638-5503

Fax: 330-638-9927

mhovis@bazettatwp.org

Wal-Mart Donatlon for trustee meeting 07/06/2015

302- 9MM Rounds

951-22 caliber rounds

10-12 gauge shells

25-20 gauge shells

1-28 gauge shell

4-7.62X39 shells

11-50 caliber bullets

Accept donation from Walmart and authorize to trade in with Standard Law Enforcement supply Company.



June 2015

Published Date: July 1, 2015

Activity	Total
Calls for Service	637
Incident Reports Filed	107
Traffic Crash Investigations	12
Number of Persons Arrested	44
Traffic Offenses	59
Traffic Citations Issued	46
Vehicle Miles Traveled	10,140.30
Office Contacts	225

*Numbers are subject to change due to report status and other circumstances



Bazetta Township Police Department Yearly Comparison Report 2014 - 2015

2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Calls for Service	476	396	554	568	668	726	696	713	563	526	531	474	6891
Incidents Filed	119	93	104	140	149	134	106	124	106	103	121	105	1404
Traffic Crash Investigations	12	17	13	13	17	13	12	6	15	17	24	10	169
Number of Persons Arrested	48	38	34	57	68	62	32	51	48	42	67	43	590
Traffic Offenses	74	56	84	128	97	103	47	68	94	73	68	49	941
Miles Traveled	13,053.8	11,052.6	14,376	12,716.38	12,695.2	12,640	12,102	12,654.8	13,422	13,466.6	11,395.20	11,275.90	150,850.48

2015

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Calls for Service	423	440	491	516	701	637							3208
Incidents Filed	100	97	117	110	124	107							655
Traffic Crash Investigations	18	14	9	10	13	12							76
Number of Persons Arrested	42	38	54	46	46	44							270
Traffic Offenses	58	27	81	65	116	59							406
Miles Travel	11,116.1	9,326.80	10,909.1	11,181.20	11,590.40	10,140.30							64263.9

*Some Statistics may have been updated

** Numbers published as of July 1, 2015 subject to change
**COS Stats provided by the 911 center may not reflect actual #'s

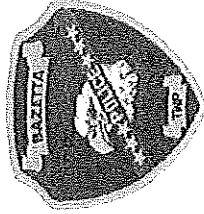
**Numbers updated on July 1, 2015

Bazetta Township Police Department

Year to Date Analysis January to June 2014 Comparison to January to June 2015

Chief of Police Michael J Hovis

Sgt. Christopher G. Herlinger



	January to June 2014	January to June 2015	↑↓Percentage Difference from 2014 to 2015
Calls for Service	3388	3208	-5.313
Incidents Filed	739	655	-11.367
Traffic Crash Investigations	85	76	-10.588
Number of Persons Arrested	307	270	-12.052
Traffic Offenses	542	406	-25.092
Miles Traveled	76,533.98	64,263.9	-16.032

Numbers published as of July 1, 2015 – subject to change Numbers updated on 7/1/2015

Greg 330 539 4906
Rich 330 240 7897

Purchase Order

TO <i>Bazzetta Twp.</i>	SHIP TO <i>Tanglewood Tree</i>
ADDRESS <i>Fire Station Lot</i>	ADDRESS <i>1336 Sadam Hoteling</i>
CITY, STATE, ZIP	CITY, STATE, ZIP <i>Venue Twp. Berard Oh 44420</i>

DATE <i>7-6-15</i>	DATE REQUIRED	TERMS <i>Completion</i>	HOW SHIPPED	REQ. NO. OR DEPT.	FOR
-----------------------	---------------	----------------------------	-------------	-------------------	-----

QUANTITY ORDERED	QUANTITY RECEIVED	PLEASE SUPPLY LISTED ITEMS BELOW	PRICE	UNIT
1		<i>Tree work: Chip up branches located on property where fire station will be built. Use chipper to chip up branches that were left from trees removed on lot. Blow chips on property & leave any large wood for firewood.</i>		
2				
3				
4				
5				
6				
7				
8				
9				
		<i>Chipper work - 2500</i>		
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

IMPORTANT	Please send _____ copies of your INVOICE with ORIGINAL BILL OF LADING.
Purchase Order Number must appear on all invoices - packaging, etc. Please notify us immediately if you are unable to complete the order by date specified.	PURCHASING AGENT

207351

Gres
MT MAN Tree Service 330-539-49

CUSTOMER'S ORDER NO.	DEPARTMENT	DATE
----------------------	------------	------

NAME BAZZETTA Twp

ADDRESS

CITY, STATE, ZIP

SOLD BY	CASH	C.O.D.	CHARGE	ON. ACCT.	MDSE. RETD.	PAID OUT
---------	------	--------	--------	-----------	-------------	----------

QUANTITY	DESCRIPTION	PRICE	AMOUNT
1	Chip Brush AT Fire Station		
2	LOT leave chips on site		
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			\$3500
18			+ SALES TAX

RECEIVED BY

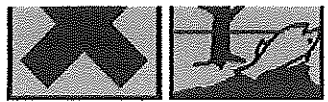
A-5805
T-46320/46350

KEEP THIS SLIP FOR REFERENCE

01-11

Body Contact: 2
 Reactivity: 1
 Chronic: 2

Low=1
 Moderate=2
 High=3
 Extreme=4



Permethrin

1 of 10

sc-201319



The Power to Purify

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

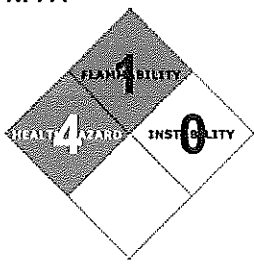
Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
 Permethrin

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

Santa Cruz Biotechnology, Inc.
 2145 Delaware Avenue
 Santa Cruz, California 95060
 800.457.3801 or 831.457.3800

EMERGENCY:

ChemWatch
 Within the US & Canada: 877-715-9305
 Outside the US & Canada: +800 2436 2255
 (1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

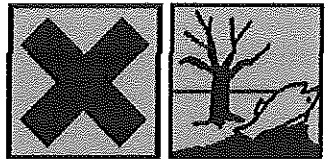
C21-H20-Cl2-O3, "cyclopropanecarboxylic acid, 3-(2, 2-dichlorovinyl)-2, 2-dimethyl, ", "3-phenoxybenzyl ester, (+-), (cis, trans)-", "3-phenoxybenzyl (+-)-3-(2, 2-dichlorovinyl)-2, 2-", dimethylcyclopropanecarboxylate, "3-phenoxybenzyl dl-cis/trans-3-(2, 2-dichlorovinyl)-2, 2-dimethyl-1-", cyclopropane, -carboxylate, "(3-phenoxyphenyl)methyl-3-(2, 2-dichloroethenyl)-2, 2-dimethylcyclopropane", -carboxylate, Ambush, *Kestrel, *Talcord, Ambushfos, *Outflank, *Tomade, Coopex, *Peregin, *Perigen, Corsair, *Pickel, Dragnet, *Pounce, Ectoban, *Prames, Exmin, *Qamlin, Exsmin, *Stockade, Kafil, *Stomoxin, pyrethrum/pyrethroid /pyrethrin

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	2	

Min/Nil=0
 Low=1
 Moderate=2
 High=3
 Extreme=4



Rats fed on a diet of pyrethrins for 5000 ppm for 2 years showed some signs of tissue damage including liver lesions, bile duct proliferation and focal necrosis of the liver cells. A no-effect level of 1000 ppm found in animal experiments correspond to a daily dose of 3600 mg/man.

One long-term mouse study provided evidence of oncogenicity in the lungs at high dose levels. Toxicological evidence from mutagenicity studies and from long-term mouse and rat studies suggest that permethrins oncogenic potential is low, is limited to female mice and is

CANADIAN WHMIS SYMBOLS



2 of 10

EMERGENCY OVERVIEW

RISK

May cause SENSITISATION by skin contact.

Harmful by inhalation, in contact with skin and if swallowed.

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may cause transient discomfort characterized by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

SKIN

■ Skin contact with the material may be harmful; systemic effects may result following absorption.

■ The material is not thought to be a skin irritant (as classified using animal models). Abrasive damage however, may result from prolonged exposures.

■ Open cuts, abraded or irritated skin should not be exposed to this material.

■ Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED

■ Inhalation of vapors, aerosols (mists, fumes) or dusts, generated by the material during the course of normal handling, may be harmful.

■ The material is not thought to produce respiratory irritation (as classified using animal models). Nevertheless inhalation of dusts, or fume, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.

■ Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

■ This material, like natural pyrethrins, may cause central stimulation with nausea, vomiting, stomach upset, diarrhea, hypersensitivity, inco-ordination, tremors, muscle paralysis, convulsion, coma and respiratory failure. There may be aggressive behavior, tremor and weakness.

■ Inhalation of pyrethrins may produce nausea, vomiting, sneezing, serious nasal discharge, nasal stuffiness and asthma. High concentrations may produce hyperexcitability, inco-ordination, tremors, muscular paralysis and death (due to respiratory failure).

There have been some reports of transient facial tingling (paraesthesia) which lasts a few hours after exposure.

CHRONIC HEALTH EFFECTS

■ Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.

There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment.

Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

There is some evidence that inhaling this product is more likely to cause a sensitization reaction in some persons compared to the general population.

Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung.

Chronic poisoning by natural pyrethrins may result in convulsion, tetanic paralysis, rapid and uneven heart beat, liver and kidney damage, or death.

The natural pyrethrins may produce hypersensitivity, especially following previous sensitising exposure. In general, repeated exposures over 2 or 3 years are required to elicit a response and involve exposure to pyrethrum rather than its individual components (including pyrethrins). The sesquiterpene lactone (pyrethrosin) and the pyrethrum glycoproteins account for the immediate and delayed hypersensitivity seen in guinea pigs following a single injection of ground chrysanthemum in Freud's adjuvant. Mild erythematic vesicular dermatitis (with papules), pruritus, localized oedema (particularly of the face, lips and eyelids), rhinitis, tachycardia, pallor and sweating are the most common syndromes. An initial skin sensitisation can progress to marked dermal oedema and skin cracking. Pyrethrum dermatitis appears to increase in hot weather or under conditions where heavy perspiration is produced. The active ingredients of pyrethrum (except pyrethrin II) are inactive in patch tests. Those patients allergic to ragweed pollen are particularly sensitive to pyrethrin. Rats fed on a diet of pyrethrins for 5000 ppm for 2 years showed some signs of tissue damage including liver lesions, bile duct proliferation and focal necrosis of the liver cells. A no-effect level of 1000 ppm found in animal experiments correspond to a daily dose of 3600 mg/man.

One long-term mouse study provided evidence of oncogenicity in the lungs at high dose levels. Toxicological evidence from mutagenicity studies and from long-term mouse and rat studies suggest that permethrins oncogenic potential is low, is limited to female mice and is

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Gloves:
Respirator:

probably epigenetic.
Oral administration in rats produced a marginal increase in pulmonary adenomas in males.

3 of 10

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
permethrin	52645-53-1	100
being a mixture of trans and cis-isomers (typically 60:40) as		
<u>trans-permethrin</u>	51877-74-8	
<u>cis-permethrin</u>	61949-76-6	

Section 4 - FIRST AID MEASURES

SWALLOWED

· IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ For chronic or short term repeated exposures to pyrethrum and synthetic pyrethroids: Mammalian toxicity of pyrethrum and synthetic pyrethroids is low, in part because of poor bioavailability and a large first pass extraction by the liver. The most common adverse reaction results from the potent sensitizing effects of pyrethrins.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Negligible.
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	1.190-1.272
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear breathing apparatus plus protective gloves.
When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

· Combustible solid which burns but propagates flame with difficulty.
· Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust may burn rapidly and fiercely if ignited.
Combustion products include: carbon monoxide (CO), carbon dioxide (CO₂), hydrogen chloride, phosgene, other pyrolysis products typical of burning organic material.

FIRE INCOMPATIBILITY

■ Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:
Chemical goggles.
Gloves:
Respirator:

US ACGIH
Threshold Limit
Values (TLV)

permethrin
(Pyrethrum)

5

TLV Basis:
liver
damage;
lower
respiratory

Particulate

4 of 10

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Control personal contact by using protective equipment.
- Use dry clean up procedures and avoid generating dust.
- Place in a suitable, labelled container for waste disposal.

Environmental hazard - contain spillage.

MAJOR SPILLS

- Environmental hazard - contain spillage.

Moderate hazard.

- CAUTION: Advise personnel in area.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.

- Do NOT cut, drill, grind or weld such containers.
- In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.

RECOMMENDED STORAGE METHODS

- Glass container.
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

STORAGE REQUIREMENTS

- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC	Notes
Canada - Alberta Occupational Exposure Limits	permethrin (Pyrethrum)		5						
Canada - British Columbia Occupational Exposure Limits	permethrin (Pyrethrum)		5						S
US NIOSH Recommended Exposure Limits (RELs)	permethrin (Pyrethrum)		5						
US OSHA Permissible Exposure Levels (PELs) - Table Z1	permethrin (Pyrethrum)		5						
US ACGIH Threshold Limit Values (TLV)	permethrin (Pyrethrum)		5						TLV Basis: liver damage; lower respiratory

US - Minnesota Permissible Exposure Limits (PELs)	permethrin (Pyrethrum)	5	
US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants	permethrin (Pyrethrum)	5	
US - Vermont Permissible Exposure Limits Table Z-1-A Final Rule Limits for Air Contaminants	permethrin (Pyrethrum)	5	
US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants	permethrin (Pyrethrum)	5	
US - California Permissible Exposure Limits for Chemical Contaminants	permethrin (Pyrethrum)	5	
US - Idaho - Limits for Air Contaminants	permethrin (Pyrethrum)	5	
Canada - Quebec Permissible Exposure Values for Airborne Contaminants (English)	permethrin (Pyrethrum)	5	
US - Hawaii Air Contaminant Limits	permethrin (Pyrethrum)	5	10
US - Alaska Limits for Air Contaminants	permethrin (Pyrethrum)	5	
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	permethrin (Pyrethrum)	5	10
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	permethrin (Pyrethrum)	5	10
US - Washington Permissible exposure limits of air contaminants	permethrin (Pyrethrum)	5	10

than 240 minutes according to EN 374) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

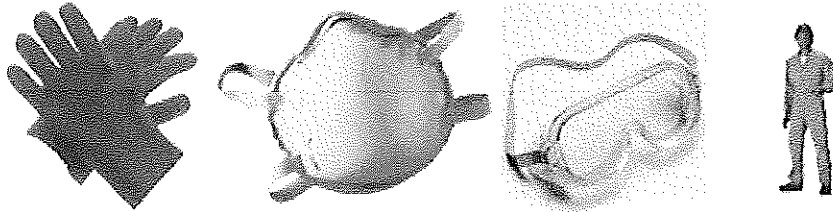
· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a

US - Michigan Exposure Limits for Air Contaminants	permethrin (Pyrethrum)	5	6 of 10	
Canada - Prince Edward Island Occupational Exposure Limits	permethrin (Pyrethrum)	5		TLV Basis: liver damage; lower respiratory tract irritation
US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants	permethrin (Pyrethrum)	5		
Canada - Nova Scotia Occupational Exposure Limits	permethrin (Pyrethrum)	5		TLV Basis: liver damage; lower respiratory tract irritation
US - Oregon Permissible Exposure Limits (Z-1)	permethrin (Pyrethrum)	5		
Canada - Northwest Territories Occupational Exposure Limits (English)	permethrin (Pyrethrum)	5	10	

ENDOELTABLE

PERSONAL PROTECTION



RESPIRATOR

Particulate

Consult your EHS staff for recommendations

EYE

- Safety glasses with side shields.
- Chemical goggles.

HANDS/FEET

■ NOTE: The material may produce skin sensitization in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include: such as:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739).

· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374) is recommended.

· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374) is recommended.

· Contaminated gloves should be replaced.

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a

- are hydrolysed by oxygen and/or sunlight
 - may react with strong oxidisers to produce fire and explosions
 - are incompatible with alkalis.
 - Avoid strong acids, bases.
- Avoid reaction with oxidizing agents.

non-perfumed moisturiser is recommended.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene
- nitrile rubber
- butyl rubber
- fluoroacoutchouc
- polyvinyl chloride

Gloves should be examined for wear and/ or degradation constantly.

OTHER

- Overalls.
- P.V.C. apron.
- Barrier cream.
- Skin cleansing cream.
- Eye wash unit.

ENGINEERING CONTROLS

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Solid.
Does not mix with water.
Sinks in water.

State	Divided solid	Molecular Weight	391.31
Melting Range (°F)	95~	Viscosity	Not Applicable
Boiling Range (°F)	428	Solubility in water (g/L)	Partly miscible
Flash Point (°F)	Not available	pH (1% solution)	Not applicable
Decomposition Temp (°F)	Not available.	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available.	Vapour Pressure (mmHG)	Negligible.
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.190-1.272
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	13.5
Volatile Component (%vol)	Negligible	Evaporation Rate	Not available

PERMETHRIN

log Kow (Sangster 1997): 6.5

APPEARANCE

Colourless crystals at temperatures below melting point, or a pale yellow viscous liquid. Soluble or miscible with organic solvents, except ethylene glycol. Exists as two isomers, the alpha cis isomer is more active against insects and arthropods. Usually transported as an emulsifiable racemic concentrate. The material is rapidly degraded in soil and biodegraded in mammals.

log Kow 3.48-6.5

Material	Value
----------	-------

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Pyrethrins and permethrins:
 - are unstable in the presence of light, heat, moisture and air
 - are hydrolysed by oxygen and/ or sunlight
 - may react with strong oxidisers to produce fire and explosions
 - are incompatible with alkalis.
 - Avoid strong acids, bases.
- Avoid reaction with oxidizing agents.

very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 This material and its container must be disposed of as hazardous waste.
 Avoid release to the environment.
 Refer to special instructions/ safety data sheets.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

PERMETHRIN

TOXICITY AND IRRITATION

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.
 ■ The substance is classified by IARC as Group 3:
 NOT classifiable as to its carcinogenicity to humans.
 Evidence of carcinogenicity may be inadequate or limited in animal testing.

PERMETHRIN:

TOXICITY	IRRITATION
Oral (rat) LD50: 383 mg/kg	Skin (rabbit): 500 mg/24h - Mild
Inhalation (rat) LC50: 485 mg/m ³	
Dermal (rat) LD50: 1750 mg/kg	
Dermal (mouse) LD50: >10000 mg/kg	
Oral (rabbit) LD50: 4000 mg/kg	
Dermal (rabbit) LD50: >2000 mg/kg	
Oral (g.pig) LD50: 4000 mg/kg	
Oral (rat) LD50: 6000 mg/kg *	

cis/trans (None) ratio: 25:75: in corn oil

■ [* The Pesticides Manual, Incorporating The Agrochemicals Handbook, 10th Edition, Editor Clive Tomlin, 1994, British Crop Protection Council].

Oral (rat) LD50: 430-4000 mg/kg *
 Oral (mouse) LD50: 540-2960 mg/kg *
cis/trans ratio: 40:60
cis/trans ratio: 20:80
 ADI: 0.05 mg/kg for nominal cis-trans 40:60 and 25:75 isomers only

TOXICITY

IRRITATION

TRANS-PERMETHRIN:

Oral (mouse) LD50: 3100 mg/kg

Nil
Reported

Intraperitoneal (mouse) LD50: 1000 mg/kg

Subcutaneous (frog) LD50: 7.5 mg/kg

CIS-PERMETHRIN:

Intraperitoneal (mouse) LD50:
108 mg/kg

Nil
Reported

Intravenous (mouse) LD50: 17 mg/kg

CARCINOGEN

PERMETHRIN

US Environmental Defense
Scorecard Suspected
Carcinogens

Reference(s)

OPP-CAN

Section 12 - ECOLOGICAL INFORMATION

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 This material and its container must be disposed of as hazardous waste.
 Avoid release to the environment.
 Refer to special instructions/ safety data sheets.

N.O.S. *(CONTAINS PERMETHRIN)
Maritime Transport IMDG:
IMDG Class: 9 IMDG Subrisk: None
UN Number: 3077 Packing Group: III
EMS Number: F-A , S-F Special provisions: 179 274 335 909

Ecotoxicity

Ingredient	Persistence: Water/Soil	^{9 of 10} Persistence: Air	Bioaccumulation	Mobility
permethrin	HIGH		HIGH	LOW

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.
Puncture containers to prevent re-use and bury at an authorized landfill.
Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:
· Reduction
· Reuse
· Recycling
· Disposal (if all else fails)
This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.
DO NOT allow wash water from cleaning equipment to enter drains. Collect all wash water for treatment before disposal.
· Recycle wherever possible.
· Consult manufacturer for recycling options or consult Waste Management Authority for disposal if no suitable treatment or disposal facility can be identified.

Section 14 - TRANSPORTATION INFORMATION



DOT:
Symbols: G Hazard class or Division: 9
Identification Numbers: UN3077 PG: III
Label Codes: 9 Special provisions: 8, 146,
335, B54,
IB8, IP3,
N20, T1,
TP33
Packaging: Exceptions: 155 Packaging: Non- bulk: 213
Packaging: Exceptions: 155 Quantity limitations: No limit
Passenger aircraft/rail:
Quantity Limitations: Cargo No limit Vessel stowage: Location: A
aircraft only:
Vessel stowage: Other: None
Hazardous materials descriptions and proper shipping names:
Environmentally hazardous substance, solid, n.o.s

Air Transport IATA:

ICAO/IATA Class: 9 ICAO/IATA Subrisk: None
UN/ID Number: 3077 Packing Group: III
Special provisions: A97
Cargo Only
Packing Instructions: 911 Maximum Qty/Pack: 400 kg
Passenger and Cargo Passenger and Cargo
Packing Instructions: 911 Maximum Qty/Pack: 400 kg
Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity
Packing Instructions: Y911 Maximum Qty/Pack: 30 kg G
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID,
N.O.S. *(CONTAINS PERMETHRIN)

Maritime Transport IMDG:

IMDG Class: 9 IMDG Subrisk: None
UN Number: 3077 Packing Group: III
EMS Number: F-A , S-F Special provisions: 179 274 335 909

Limited Quantities: 5 kg Marine Pollutant: Yes
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
10 of 10

Section 15 - REGULATORY INFORMATION

permethrin (CAS: 52645-53-1, 54774-45-7, 57608-04-5, 93388-66-0, 63364-00-1, 60018-94-2, 75497-64-2) is found on the following regulatory lists;

"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances", "OSPAR Substances removed from the List of Substances of Possible Concern", "US - Massachusetts Oil & Hazardous Material List", "WHO Guidelines for Drinking-water Quality - Chemicals for which guideline values have not been established"

Regulations for ingredients

trans-permethrin (CAS: 51877-74-8) is found on the following regulatory lists;

"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Massachusetts Oil & Hazardous Material List", "US - Pennsylvania - Hazardous Substance List", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

cis-permethrin (CAS: 61949-76-6) is found on the following regulatory lists;

"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Massachusetts Oil & Hazardous Material List", "US - Pennsylvania - Hazardous Substance List", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

Section 16 - OTHER INFORMATION

ND

Substance CAS Suggested codes cis- permethrin 61949- 76- 6

Ingredients with multiple CAS Nos

Ingredient Name CAS permethrin 52645-53-1, 54774-45-7, 57608-04-5, 93388-66-0, 63364-00-1, 60018-94-2, 75497-64-2

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Oct-22-2009

Print Date: Dec-22-2010

Limited Quantities: 5 kg Marine Pollutant: Yes
Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
10 of 10

Section 15 - REGULATORY INFORMATION

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cis-permethrin (CAS: 61949-76-6) is found on the following regulatory lists;

"Canada - Saskatchewan Environmental Persistent or Chronic Hazardous Substances", "US - California Occupational Safety and Health Regulations (CAL/OSHA) - Hazardous Substances List", "US - Massachusetts Oil & Hazardous Material List", "US - Pennsylvania - Hazardous Substance List", "US CWA (Clean Water Act) - Reportable Quantities of Designated Hazardous Substances", "US Department of Transportation (DOT) List of Hazardous Substances and Reportable Quantities - Hazardous Substances Other Than Radionuclides", "US List of Lists - Consolidated List of Chemicals Subject to EPCRA, CERCLA and Section 112(r) of the Clean Air Act"

Section 16 - OTHER INFORMATION

ND

Substance CAS Suggested codes cis- permethrin 61949- 76- 6

Ingredients with multiple CAS Nos

Ingredient Name CAS permethrin 52645-53-1, 54774-45-7, 57608-04-5, 93388-66-0, 63364-00-1, 60018-94-2, 75497-64-2

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Issue Date: Oct-22-2009

Print Date: Dec-22-2010

treatment of head lice and scabies on humans are available, but these are considered pharmaceuticals, which are regulated by the United States Food and Drug Administration (FDA).² Uses for individual permethrin products vary widely. Always read and follow the label when applying pesticide products.

PERMETHRIN

TECHNICAL FACT SHEET

Signal words for products containing permethrin may range from Caution to Danger. The signal word reflects the combined toxicity of the active ingredient and other ingredients in the product. See the pesticide label on the product and refer to the NPIC fact sheets on **Signal Words** and **Inert or "Other" Ingredients**.

npic

NATIONAL PESTICIDE INFORMATION CENTER

1.800.858.7378

NPIC Technical Fact Sheets provide information that is complex and intended for individuals with a scientific background and/or familiarity with toxicology and risk assessment. This document is intended to promote informed decision-making. Please refer to the General Fact Sheet for less technical information.

Chemical Class and Type:

- Permethrin is an insecticide in the pyrethroid chemical family. The International Union of Pure and Applied Chemistry (IUPAC) name for permethrin is 3-phenoxybenzyl (1R,3R;1R,3S)-3-(2,2-dichlorovinyl)-2,2-dimethyl-cyclopropanecarboxylate and the Chemical Abstracts Service (CAS) registry number is 52645-53-1.¹ Permethrin is considered a type I pyrethroid.²
- Permethrin was originally registered for use by the United States Environmental Protection Agency (U.S. EPA) in 1979, and it was re-registered in 2006.³ See the text box on **Laboratory Testing**.
- Permethrin is a blend of two stereoisomers.¹ Details on the ratio used in a specific product may be listed on the label, or may not be readily available. For the remainder of this fact sheet, note that permethrin refers to an isomer blend and not one isomer alone.

Laboratory Testing: Before pesticides are registered by the U.S. EPA, they must undergo laboratory testing for short-term (acute) and long-term (chronic) health effects. Laboratory animals are purposely given high enough doses to cause toxic effects. These tests help scientists judge how these chemicals might affect humans, domestic animals, and wildlife in cases of overexposure.

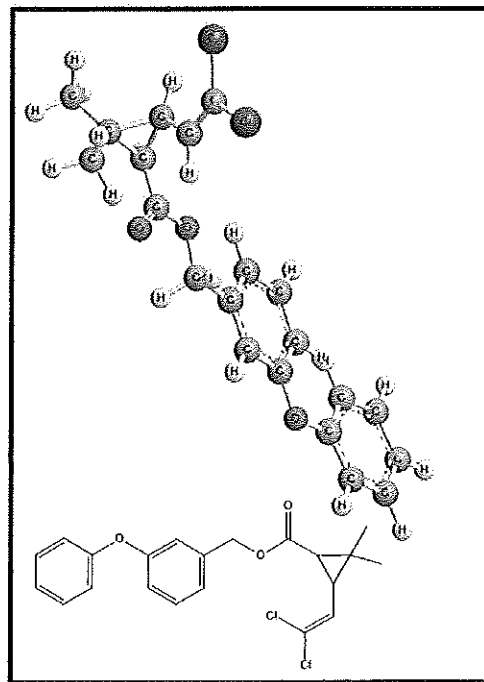
Physical / Chemical Properties:

- Technical permethrin ranges from a colorless crystal to a yellow or brown viscous liquid.^{1,2} No information on the odor of permethrin was found.
- Vapor pressure²: 2.15×10^{-8} mmHg
- Octanol-Water Partition Coefficient ($\log K_{ow}$)¹: 6.1 at 20 °C
- Henry's constant²: 1.4×10^{-6} atm·m³/mol
- Molecular weight¹: 391.3 g/mol
- Solubility (water)^{1,2}: 5.5×10^{-3} mg/L, 6×10^{-3} mg/L
- Soil Sorption Coefficient (K_{oc})⁴: 1.00×10^5

Uses:

- Permethrin can be used in public health mosquito abatement programs and on a variety of food or feed crops and livestock; or in structures and buildings, including livestock housing and food-handling establishments. Permethrin can also be used in numerous residential sites, both indoor and outdoor, and on pets and clothing. When permethrin is used on large areas like crops, nurseries, and sod farms it is considered a restricted use pesticide. For other applications, it is considered a general use pesticide. Formulations of permethrin used for treatment of head lice and scabies on humans are available, but these are considered pharmaceuticals, which are regulated by the United States Food and Drug Administration (FDA).² Uses for individual permethrin products vary widely. Always read and follow the label when applying pesticide products.
- Signal words for products containing permethrin may range from Caution to Danger. The signal word reflects the combined toxicity of the active ingredient and other ingredients in the product. See the pesticide label on the product and refer to the NPIC fact sheets on **Signal Words** and **Inert or "Other" Ingredients**.

Molecular Structure - Permethrin



Dermal exposure to permethrin may cause irritation, itching, or paresthesia (a tingly, prickly sensation) at the site of contact. These symptoms rarely last more than 24 hours.¹² Ocular exposures may result in pain, redness, or a burning sensation.¹³

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3

TOXICITY CLASSIFICATION - PERMETHRIN

	High Toxicity	Moderate Toxicity	Low Toxicity	Very Low Toxicity
Acute Oral LD ₅₀	Up to and including 50 mg/kg (≤ 50 mg/kg)	Greater than 50 through 500 mg/kg (> 50 - 500 mg/kg)	Greater than 500 through 5000 mg/kg (> 500 - 5000 mg/kg)	Greater than 5000 mg/kg (> 5000 mg/kg)
Inhalation LC ₅₀	Up to and including 0.05 mg/L (≤ 0.05 mg/L)	Greater than 0.05 through 0.5 mg/L (> 0.05 - 0.5 mg/L)	Greater than 0.5 through 2.0 mg/L (> 0.5 - 2.0 mg/L)	Greater than 2.0 mg/L (> 2.0 mg/L)
Dermal LD ₅₀	Up to and including 200 mg/kg (≤ 200 mg/kg)	Greater than 200 through 2000 mg/kg (> 200 - 2000 mg/kg)	Greater than 2000 through 5000 mg/kg (> 2000 - 5000 mg/kg)	Greater than 5000 mg/kg (> 5000 mg/kg)
Primary Eye Irritation	Corrosive (irreversible destruction of ocular tissue) or corneal involvement or irritation persisting for more than 21 days	Corneal involvement or other eye irritation clearing in 8 - 21 days	Corneal involvement or other eye irritation clearing in 7 days or less	Minimal effects clearing in less than 24 hours
Primary Skin Irritation	Corrosive (tissue destruction into the dermis and/or scarring)	Severe irritation at 72 hours (severe erythema or edema)	Moderate irritation at 72 hours (moderate erythema)	Mild or slight irritation at 72 hours (no irritation or erythema)

The highlighted boxes reflect the values in the "Acute Toxicity" section of this fact sheet. Modeled after the U.S. Environmental Protection Agency, Office of Pesticide Programs, Label Review Manual, Chapter 7: Precautionary Labeling. http://www.epa.gov/oppfead1/labeling/lrm/chap_07.pdf

- Cats exposed dermally to some permethrin products may experience hyperexcitability, depression, ataxia, vomiting, anorexia, tremors, or convulsions. Symptoms can begin within a few minutes or up to three days after the exposure. Some permethrin products contain high concentrations of the active ingredient and are labeled for use only on dogs. Close physical contact with a recently treated dog may also lead to symptoms in cats. If symptoms are severe and untreated, they may result in death.^{5,7,10}
- A report of 11 cats intentionally treated with products containing 45-65% permethrin described adverse effects including muscle tremors, seizures, incoordination and agitation after exposure. Of the 11 cats that were treated, all were hospitalized, and four died after the exposure. Seizures were found to develop within 24 hours of exposure, with some cats experiencing seizures within two hours. In one additional case, a cat was in proximity of two large dogs treated with a permethrin product 48 hours after treatment. Between 18 and 24 hours after being near the dogs, the cat developed signs including agitation, tremors, seizures, and ataxia.¹¹
- Animals may also display drooling or lip-smacking. This is believed to be a result of licking at the application site and thought to be caused either by the taste or a tingling sensation in the mouth.⁵
- Cattle which have been treated topically with permethrin may show signs of paresthesia including twitching the skin on their backs, trying to rub their backs, and general restlessness.⁵

Signs of Toxicity - Humans

- Dermal exposure to permethrin may cause irritation, itching, or paresthesia (a tingly, prickly sensation) at the site of contact. These symptoms rarely last more than 24 hours.¹² Ocular exposures may result in pain, redness, or a burning sensation.¹³
- While pyrethroids have been suggested as potential skin sensitizers¹², no human data were found to support this for permethrin.
- Ingestion of permethrin may cause sore throat, abdominal pain, nausea, and vomiting.^{6,13}

PERMETHRIN

Endocrine Disruption: TECHNICAL FACT SHEET

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Experiments with rat and human cancer cell lines indicated that permethrin did not act as an antagonist for estrogens or androgens, nor did it act as an agonist for estrogens or androgens.^{15,16} It was also concluded that permethrin did not act

4

- Inhalation of permethrin may cause headache, nasal and respiratory irritation, difficulty breathing, dizziness, nausea or vomiting.^{6,13} Because of permethrin's low vapor pressure, inhalation exposures are more likely to result from aerosols, spray droplets, and dust, than from actual vapors.⁶
- Always follow label instructions and take steps to minimize exposure. If any exposure occurs, be sure to follow the First Aid instructions on the product label carefully. For additional treatment advice, contact the Poison Control Center at 1-800-222-1222. If you wish to discuss an incident with the National Pesticide Information Center, please call 1-800-858-7378.

Chronic Toxicity:

Animals

- Dogs fed daily doses of permethrin at 0, 5, 50 or 500 mg/kg body weight per day for at least 96 days showed transient signs of permethrin toxicosis at the highest dose used, including tremors. Researchers determined the NOAEL to be 50 mg/kg per day for this study, based on increased liver weights and neurological effects.⁹ See the text box on **NOAEL, NOEL, LOAEL, and LOEL**.
- Mice were fed permethrin at concentrations ranging from 28 to 1400 mg/kg body weight per day for 28 days. No mice died during this experiment and no significant clinical signs were seen. Necropsies revealed an increase in liver weights relative to body weights in the 280 and 1400 dose groups. Researchers determined the NOAEL at 140 mg/kg per day based on the doses used in this study.⁹
- Rabbits given 21 daily dermal doses of permethrin ranging from 0.10 to 1.0 g/kg body weight showed signs of skin irritation, but no additional signs of toxicity were observed.¹⁴
- Guinea pigs, dogs, and rats were exposed to aerosolized permethrin for 13 weeks, five days per week, six hours each day. Concentration levels used in the experiment were 125, 250, and 500 mg/m³. At the highest dose tested, rats experienced tremors and convulsions in the first week only. The guinea pigs and dogs exhibited no clinical signs of poisoning throughout the experiment.¹⁴
- Rats involved in a 2-year feeding study were given 100 mg/kg permethrin in their diet. These rats showed no signs of toxicity.¹

NOAEL: No Observable Adverse Effect Level
NOEL: No Observed Effect Level
LOAEL: Lowest Observable Adverse Effect Level
LOEL: Lowest Observed Effect Level

Humans

- The U.S. EPA has determined a reference dose (RfD) and a Population Adjusted Dose (PAD) of 0.25 mg/kg/day for both acute and chronic dietary exposures to permethrin. These levels are based on a NOAEL of 25 mg/kg/day in rats and an Uncertainty Factor (UF) of 100.² See the text box on **Reference Dose (RfD)** (page 8).
- No human data were found on chronic effects of permethrin. See the text box on **Exposure**.

Exposure: Effects of permethrin on human health and the environment depend on how much permethrin is present and the length and frequency of exposure. Effects also depend on the health of a person and/or certain environmental factors.

Endocrine Disruption:

- Experiments with rat and human cancer cell lines indicated that permethrin did not act as an antagonist for estrogens or androgens, nor did it act as an agonist for estrogens or androgens.^{15,16} It was also concluded that permethrin did not act

PERMETHRIN

TECHNICAL FACT SHEET

A study was conducted involving 96 women who had applied a single, full-body, dermal dose of 4% permethrin as a scabies treatment during their second or third trimesters of pregnancy. Researchers found no evidence that exposure to permethrin affected the outcome of the participants' pregnancies.²²

A study involving 113 women using a 1% permethrin head lice treatment during pregnancy found no indication that exposure to permethrin affected the outcome of their pregnancies.²³

as a progestin in human cancer cells.^{15,16} However, other research on human cancer cell lines implied a potential for permethrin to interfere with estrogenic activity through interface with the progesterone receptor.¹⁷ More research is required to better understand any possible link between permethrin and endocrine function.

- Permethrin is included in the draft list of initial chemicals for screening under the U.S. EPA Endocrine Disruptor Screening Program (EDSP). The list of chemicals was generated based upon exposure potential, not based on whether the pesticide is a known or likely potential cause of endocrine effects.¹⁸

Carcinogenicity:

Animals

- Rats fed diets containing 500, 1000, or 2500 ppm for a period of two years showed no signs of carcinogenicity, however, signs of toxicity were noted at the highest doses used.¹⁹
- A lifetime cancer study involving mice fed diets with 250, 1000, or 2500 ppm permethrin resulted in slightly elevated numbers of benign hepatic tumors in males at the highest dose tested although the effect was not statistically significantly different from controls.¹⁹

Humans

- In 1991, the International Agency for Research on Cancer (IARC) classified permethrin as Group 3, "not classifiable as to its carcinogenicity to humans," due to a lack of evidence.²⁰ More recently, the U.S. EPA has classified permethrin as "likely to be carcinogenic to humans" by ingestion. This rating is based on benign lung and liver tumors found in mice and similar, though inconclusive, evidence in rats, as well as corroborative Structure-Activity Relationships (SAR) information.² See the text box on **Cancer**.

Cancer: Government agencies in the United States and abroad have developed programs to evaluate the potential for a chemical to cause cancer. Testing guidelines and classification systems vary. To learn more about the meaning of various cancer classification descriptors listed in this fact sheet, please visit the appropriate reference, or call NPIC.

- No human data were found on the carcinogenic effects of permethrin.

Reproductive or Teratogenic Effects:

Animals

- Researchers studied the potential developmental effects of oral exposure to permethrin in pregnant rats. At a dose of 150 mg/kg body weight per day of pregnancy, researchers observed a reduction in fetal rat weights and a greater occurrence of additional ribs in the developing fetuses. No adverse effects were noted at 50 mg/kg body weight per day, the next lowest dose.²¹
- A similar study examined the effects of oral permethrin exposures on the offspring of pregnant rabbits. At 1200 mg/kg body weight per day of gestation, rabbits exhibited a greater loss of developing fetuses and decreased ossification of hind- and fore-limbs of the fetuses. No adverse effects were observed at the next lowest dose, 600 mg/kg body weight per day.²¹

Humans

- A study was conducted involving 196 women who had applied a single, full-body, dermal dose of 4% permethrin as a scabies treatment during their second or third trimesters of pregnancy. Researchers found no evidence that exposure to permethrin affected the outcome of the participants' pregnancies.²²
- A study involving 113 women using a 1% permethrin head lice treatment during pregnancy found no indication that exposure to permethrin affected the outcome of their pregnancies.²³

Environmental Fate:

PERMETHRIN

TECHNICAL FACT SHEET

The average half-life of permethrin in aerobic soils is 39.5 days, with a range from 11.6 to 113 days.³⁰ See the text box on Half-life.

• Permethrin binds tightly to soil and is broken down primarily by microorganisms, but also by photolysis.³⁰

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6

Fate in the Body:

Absorption

- Human case studies involving skin applications of permethrin indicated that about 0.5% of the applied dose was absorbed dermally.²⁴
- Animal studies showed quick and substantial absorption of permethrin upon ingestion.⁹ In one study of rats, about 60% of the orally administered dose was absorbed with an absorption half-life of less than one hour.²⁵
- No information was found regarding absorption rates following inhalation of permethrin.

Distribution

- Feeding studies using rats indicated that permethrin was rapidly distributed throughout the body. Peak concentrations measured in plasma, nerve tissue, liver, and kidneys occurred around four hours after ingestion. Levels found in nervous tissues were generally higher compared with in plasma.^{25,26}
- A human case study involving an intentional ingestion of permethrin showed a similar distribution pattern with a peak permethrin concentration found in blood three to four hours after ingestion.²⁷

Metabolism

- In animal feeding studies using rats, goats, cows, and hens, permethrin was metabolized quickly in the liver. Hydrolysis, hydroxylation, oxidation, and conjugation are all involved in the process of metabolism.^{9,28}
- While several metabolites of permethrin have been identified, permethrin itself is considered the only compound of toxicological significance.²⁹

Excretion

- Permethrin and its metabolites are excreted primarily in the urine, but also in the feces.^{6,9}
- In rats given oral doses of permethrin, the excretion half-life was measured at 12.3 hours for plasma and from 9 to 23 hours for certain brain and nervous tissue, including the medulla oblongata.²⁵

Medical Tests and Monitoring:

- Permethrin metabolites can be detected in urine or blood; however, most clinical laboratories do not offer these testing services. The presence of a measurable amount of these metabolites in blood or urine does not mean that adverse health effects would be expected. In addition, these chemicals are not exclusively the products of exposure to permethrin. Further research is needed for scientists to better understand the relationship between the measured metabolites and the potential for adverse health effects.²⁶
- The National Health and Nutrition Examination Survey (NHANES) included testing for permethrin metabolites in urine among 2539 Americans, ages 6 to 59. The relevant metabolites detected were *cis*- and *trans*-3-(2,2-dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid, and 3-phenoxybenzoic acid. These chemicals are also metabolites of other pyrethroids, thus their presence does not necessarily imply exposure to permethrin. The results from the NHANES survey indicated an average concentration of 0.321 µg/L of 3-phenoxybenzoic acid. The other permethrin metabolites were frequently below the level of detection so that a valid average concentration could not be calculated.²⁹

Environmental Fate:

Soil

- The average half-life of permethrin in aerobic soils is 39.5 days, with a range from 11.6 to 113 days.³⁰ See the text box on Half-life.
- Permethrin binds tightly to soil and is broken down primarily by microorganisms, but also by photolysis.³⁰

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7

Water

- When permethrin enters an aquatic system, some is degraded by sunlight while in the water column but the majority binds tightly to the sediment.^{30,31}
- In water, permethrin is broken down by photolysis into 3-phenoxybenzyl alcohol (PBA) and dichlorovinyl acid (DCVA).³² The average half-life range for permethrin in the water column is about 19-27 hours, however permethrin adsorbed to sediments can persist more than a year.³⁰
- Permethrin is not likely to contaminate groundwater due to its low water solubility and strong adsorption to soil.^{4,30}

Air

- Permethrin has the potential to drift depending on application technique, however it has a very low vapor pressure and is not expected to volatilize.³⁰

Plants

- The half-life of permethrin on plant foliage varies depending on the species. The approximate range is from one to three weeks.¹⁴
- Scientists applied radio labeled permethrin to soil at a rate of 2 kg/hectare. Sugar beets, wheat, lettuce, and cotton seeds were planted in the treated soil 30, 60, and 120 days after treatment. Radioactive residues in the edible portions of mature plants were found at levels up to 0.86 µg/g in the 30-day series and 0.09 µg/g in the 120-day series.³³ A closer look at the sugar beet residues in the 30-day series indicated that the radioactivity was more likely from uptake of the metabolites than of the parent compound.³³

Indoor

- Permethrin was applied in a thin layer to an indoor surface beside a window and exposed to daylight. After 20 days, 60% of the permethrin remained on the surface.¹⁴

Food Residue

- In the FDA's Total Diet Study of 2003, permethrin residues were detected in 3% of the 1039 food samples tested. The range of permethrin levels found was 0.0008-4.7130 ppm.³⁴
- In the 2006 United States Department of Agriculture (USDA) Pesticide Data Program (PDP) report on pesticide residues in food crops, total permethrin levels were measured in 1726 food samples including bananas, collard greens, summer squash, and watermelon. A total of 0.5% of these samples had detectable residues of permethrin ranging from 0.048-4.900 ppm. None of the detected levels exceeded their corresponding permethrin tolerances.³⁵
- When testing for the cis- and trans-isomers separately, the USDA examined several additional crops, including broccoli, cranberries, peaches, and spinach. Of the 8948 samples tested, 6.7% had detectable residues ranging from 0.004 to 5.30 ppm. Spinach samples alone accounted for 97% of the detected levels of permethrin.³⁵

Ecotoxicity Studies:

Birds

- Oral dose LD₅₀s for chickens, mallard ducks, and Japanese quail are >3000, >9800, and >13,500 mg/kg body weight, respectively.¹

The "half-life" is the time required for half of the compound to break down in the environment.

1 half-life = 50% remaining

2 half-lives = 25% remaining

3 half-lives = 12% remaining

4 half-lives = 6% remaining

5 half-lives = 3% remaining

Half-lives can vary widely based on environmental factors. The amount of chemical remaining after a half-life will always depend on the amount of the chemical originally applied. It should be noted that some chemicals may degrade into compounds of toxicological significance.

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8

- Permethrin is low in toxicity to birds.¹ However, some aerosol spray formulations contain a propellant that may pose a hazard to birds by inhalation.⁵

Fish and Aquatic Life

- Permethrin is highly toxic to marine/estuarine, freshwater fish and other aquatic organisms.³
- For rainbow trout (*Oncorhynchus mykiss*), the 96-hour LC₅₀ is 2.5 µg/L and the 48-hour LC₅₀ is 5.4 µg/L. The 48-hour LC₅₀s for bluegill sunfish (*Lepomis macrochirus*) and *Daphnia* are 1.8 µg/L and 0.6 µg/L respectively.¹
- Research with freshwater amphipods indicates permethrin in aquatic sediments may inhibit growth of exposed invertebrates at levels as low as 44-73 ng/g sediment.³⁶
- In a sediment toxicity study, researchers found detectable levels of permethrin in 26 of 30 creek sediment samples in California. All 30 samples were found to be toxic to *Hyalella azteca*, a local species of amphipod, at 15 °C. Several sediment samples also included other pyrethroids and low levels of organophosphates and/or organochlorines. Researchers concluded the main contributors to sediment toxicity in this study were bifenthrin, cypermethrin, cyfluthrin, and lambda-cyhalothrin.³⁷

Terrestrial Invertebrates

- Permethrin is highly toxic to invertebrates, including honey bees and other beneficial insects. The topical LC₅₀ for honeybees is 0.029 ug/bee.^{1,3}

Regulatory Guidelines:

- The U.S. EPA has determined a RfD of 0.25 mg/kg/day for both acute and chronic dietary exposures to permethrin.² See the text box on **Reference Dose (RfD)**.
- The U.S. EPA has classified permethrin as "likely to be carcinogenic to humans".² See the text box on **Cancer** (page 5).
- The U.S. EPA has not determined a MCL for permethrin in drinking water. However, a limit of 0.3 mg/L was set by the World Health Organization (WHO) as a guideline for permethrin in drinking water when it is applied to water for mosquito control.³⁸ See the text box on **Maximum Contaminant Level (MCL)**.
- The Agency for Toxic Substances and Disease Registry (ATSDR) determined Minimum Risk Levels (MRLs) for oral exposures to technical grade permethrin of 0.3 mg/kg/day for acute oral exposures (up to 14 days) and 0.2 mg/kg/day for intermediate durations (15-364 days).²⁶

Reference Dose (RfD): The RfD is an estimate of the quantity of chemical that a person could be exposed to every day for the rest of their life with no appreciable risk of adverse health effects. The reference dose is typically measured in milligrams (mg) of chemical per kilogram (kg) of body weight per day.

U.S. Environmental Protection Agency, Technology Transfer Network, Air Toxics Health Effects Glossary, 2009. <http://www.epa.gov/ttnatw01/hlthef/hapglossaryrev.html#RfD>

Maximum Contaminant Level (MCL): The MCL is the highest level of contaminant that is legally allowed in drinking water. The MCL is enforceable. The MCL is typically measured in milligrams (mg) of contaminant per liter (L) of water.

U.S. Environmental Protection Agency, Region 5, Water, Underground Injection Control Terms, 2011. <http://epa.gov/r5water/uic/glossary.htm#mcl>

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Ecologically Sound Alternatives to Permethrin-Fogging for Mosquito Abatement

Samantha Merrill

Bat Houses

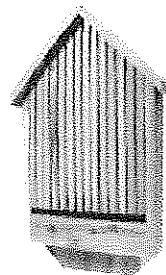
- Can be placed on public or private property
- Made to order or purchased from a variety of distributors
- Cost ranges from \$20-\$60 depending on type and size of house
- "Insectivorous bats are primary predators of night-flying insects, and many very damaging pests are on their menu. Pregnant or nursing mothers of some bat species will consume up to their body weight in insects each night (1)."

Cons:

- Must establish proper space for bat houses, volunteers to use private property
- Public misconceptions of bats
- Higher initial cost

Pros:

- Ecologically-friendly
- Native animal
- Provide shelter for important insectivore/pollinator/seed disperser
- Low-maintenance
- No special skills required to install, can be done by volunteers
- Low overall cost



Purple Martin Houses

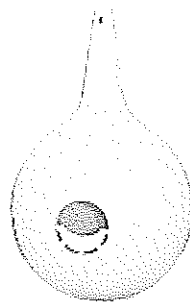
- Can be placed on public or private property
- Made to order or purchased from a variety of distributors
- Cost from \$24-up
- "Purple Martins are beautiful, friendly birds that seem to enjoy the company of humans as much as humans enjoy listening to their song. In addition to their aesthetic qualities, Purple Martins are also beneficial. A group of Purple Martins is capable of eating tens of thousands of mosquitoes in a single day. Hosting this wild bird species will help you control insects in a natural way without using chemicals that can harm plants and animals. Bats and some other bird species are also beneficial in this way. Many people interested in natural mosquito control invest in Purple Martin houses and bat houses to naturally control mosquitoes and other insects during the summer (2)."

Cons:

- Higher initial cost
- Migratory species, houses must not be allowed to be inhabited by other birds while martins are away
- Must establish proper space for houses to be used

Pros:

- Native migratory species
- Provide much-needed habitat for martins migrating in eastern states
- Ecologically-friendly
- Beautiful song bird that citizens will enjoy
- No special installation skills required, can be done by volunteers
- Lower overall cost to township
- Keeping bird houses open is primary maintenance concern



Plant Insect Control

- Certain plant oils produce unattractive scent to mosquitoes
- Lemongrass and Citronella most effective
- Seeds or plants distributed for use on public or private lands (planted into lawns, roadsides, ditches, planters, gardens, etc.)
- When areas are trimmed or mowed, plants release oils

Cons:

- Large quantities may be required for proper efficacy
- May be greater maintenance required if plants adversely affected by environmental factors
- May not be as effective as other measures

Pros:

- Ecologically-friendly
- Attractive garden plant
- Very low cost
- Easy to implement
- No permanent structures required
- Citizens have control over level of protection

1. <http://www.batcon.org/why-bats/bats-are/bats-are-important>
2. http://www.tractorsupply.com/know-how/Bird-Feeders-and-Houses_purple-martin-houses

Thank you for your time and consideration. I do hope that you will read the provided material and decide to make a change to the mosquito abatement program that will allow the private citizens as well as the public to enjoy this beautiful area without the hassle of mosquitoes or harmful chemicals. We are the stewards responsible for the safety and well-being of the plants and animals with which we share a home, and we can do a better job of protecting them while also creating a healthier place for us to live. I would love to continue the conversation about creating more ecologically-sound practices for our township and I think it would be great to get feedback from experts and citizens alike. I have included my contact information for anyone who would like to reach me, and I do hope to be updated on progress as it is made. Again, thank you for your time.

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