

## Vermiculite / ZAI (Zonolite Brand Attic Insulation)

Vermiculite is a low density insulation which has the appearance of layers of mica separated by air gaps. Photographs of vermiculite can be found in the US EPA document link below. Vermiculite is not asbestos (and vermiculite sold today does not contain asbestos) but some vermiculite deposits were contaminated with asbestos. Vermiculite was widely sold to home builders and consumers across North America to insulate attics, walls or around chimney liners. It was poured into these areas and was almost self-leveling.

In the US almost all poured vermiculite insulation came from a mine in Libby Montana contaminated with varying amounts of actinolite or tremolite asbestos. This material was sold by W.R. Grace under the trade name Zonolite Attic Insulation (ZAI). However, some of the vermiculite insulation sold in Canada came from asbestos-free deposits, mainly from South Africa. It is therefore important to determine which type of vermiculite you may have in your home. Pinchin's experience has been that about 60% of the vermiculite attic insulation samples processed by our laboratories contained asbestos. There can be a mixture of both types present because both asbestos and non-asbestos products may have been installed.

### How Pinchin can help

Pinchin Environmental can help you determine if your vermiculite insulation contains asbestos and help you solve the problem if it does. We do not generally perform field work on homes, but we can tell you how to take a sample, analyze the sample and give direction and assistance in getting the insulation removed if that is what you want to do. We provide information on collection and analysis of vermiculite. If you decide to have the suspect material analysed (since not all vermiculite contains asbestos) please follow the Recommended Vermiculite/ ZAI Sampling Procedure on page 2. We strongly advise that homeowners confirm that the laboratory that they select is accredited for asbestos analysis and has had experience with vermiculite analysis since we have seen some erroneous analyses from laboratories which do not have experience in vermiculite analysis. The qualifications of the laboratory may also be important when the home is offered for sale.

### What to do if your home has vermiculite insulation

If the insulation in your attic is not being disturbed and your attic is not used for living space or storage, it is normally recommended to leave it in this state. Clear guidance on this is available in the U.S. EPA document "Current Best Practices for Vermiculite Attic Insulation", available at [www.epa.gov/asbestos/pubs/insulation.html](http://www.epa.gov/asbestos/pubs/insulation.html). More information can be obtained at Health Canada's website at [www.hc-sc.gc.ca/iyh-vsv/prod/insulation-isolant\\_e.html](http://www.hc-sc.gc.ca/iyh-vsv/prod/insulation-isolant_e.html).

Unfortunately if you own a home with ZAI, you may need to remove the insulation before you can sell your home. A competent home inspection (usually performed by the purchaser) will normally detect vermiculite and we have seen many home sales fail due to its presence. The cost of removal depends on the size of your attic but may approach \$10,000 or more to remove and replace the insulation. Homeowners should consider upgrading the insulation and air tightness of their attic at this time. The Natural Resources Canada ecoENERGY Retrofit program offers energy audits of homes and grants to encourage energy upgrades.



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## Sampling Procedure for Vermiculite / ZAI (Zonolite Brand Attic Insulation)

Homeowners may have justified concerns in wanting to have their vermiculite insulation tested. These concerns might include:

- The attic is used for living space or frequently entered storage.
- Dust is sifting out of the attic or walls through seams, ducts or penetrations.
- If the insulation will be affected by a home renovation or alteration.
- If you are planning to sell your home.

In these cases, testing and expert advice is warranted. If you decide to have the suspect material analysed (since not all vermiculite insulation contains asbestos), for your own safety, please follow the recommended sampling procedure below.



### Vermiculite / ZAI Insulation Sampling Procedure

1. The homeowner is advised to collect a minimum of three (3) separate samples of the vermiculite insulation. Multiple sampling may identify conditions of mixed asbestos and non-asbestos vermiculite that a single sample would miss. Also, provincial occupational health and safety law for Ontario at least, requires a minimum of three samples from any single material of uniform appearance to conclude it is not an asbestos-containing material.
2. Collect two cups full of insulation taken from the bottom half of the insulation in the attic or from the bottom of the wall cavity (the asbestos tends to settle to the bottom).
3. Avoid creating and breathing any more dust than necessary during this collection and do not remain in the area longer than necessary. The U.S. EPA and Health Canada recommend that you use a respirator to reduce the dust you breathe during this collection. You can purchase a NIOSH approved half-face P100 respirator from most hardware stores or safety houses. Follow the instructions with the respirator regarding fitting and maintenance. This respirator should not be used for major disturbance of vermiculite which would be encountered during renovations in the attic or for removal of the material. Try to avoid tracking the insulation or dust into the living space of the house.
4. Place the sample in a zip lock freezer bag and provide the following information on each bag or fastened to the bags:
  - Name
  - Address
  - Phone number
  - Fax or email address
5. Complete the Chain of Custody form on page 3 and submit it with the samples
6. Have samples brought, mailed or couriered with payment to:

Mississauga Asbestos Lab  
 Pinchin Environmental Ltd.  
 Attention: Karen Slayer  
 2470 Milltower Court , Mississauga, ON L5N 7W5  
 Phone: 905-363-1385 Fax: 905-363-0681  
 Email: [kslayer@pinchin.com](mailto:kslayer@pinchin.com)

Ottawa Asbestos Lab  
 Pinchin Environmental Ltd.  
 Attention: Kendra Bertuzzi  
 515 Legget Drive, Suite 200, Kanata, ON K2K 3G4  
 Phone: 613-592-3387 Fax: 613-592-5897  
 Email : [kbertuzzi@pinchin.com](mailto:kbertuzzi@pinchin.com)

Office hours are 8:30 am to 5:00 pm Monday to Friday. There is an after-hours sample drop box beside the main doors of the Mississauga Head Office.

### Pricing for Vermiculite/ZAI Analysis:

The cost for regular analysis (5 day) is \$100 per sample (plus GST) for a total of \$105.00, or \$150 for the analysis of three samples taken from the same property, required in Ontario to conclude a material is not an asbestos-containing material (\$157.50 including GST). Payment can be made by Visa, MasterCard or cash. Please include this with the sample when submitted (include expiry date and full name on the card if paying by credit card).



Engineering Environmental and  
 Health & Safety Solutions



# Vermiculite / ZAI Analysis

## Homeowner's Chain of Custody Form

<b>DATE SUBMITTED:</b>	<b>SUBMIT TO:</b>	
	<input type="checkbox"/> Mississauga Lab - Pinchin Environmental Ltd. 2470 Milltower Court, Mississauga, ON L5N 7W5  Attn: Karen Slayer Tel: 905.363.1385 Fax: 905.363.0681	<input type="checkbox"/> Ottawa Lab - Pinchin Environmental Ltd. 515 Legget Drive, Ste 200, Kanata, ON K2K 3G4  Attn: Kendra Bertuzzi Tel: 613.592.3387 Fax: 613.592.5897

First Name		Last Name		Email:	
Address			Unit#		City
			Prov.		Postal Code
Tel		Fax		Cell	
Check Priority <input type="checkbox"/> Rush <input type="checkbox"/> Reg.		Date Required		Number of Samples	
Address of where the sample was taken (if different than above)				Copy Results to:	

### Pricing for Vermiculite/ZAI Analysis:

The cost for regular analysis (5 day) is \$100.00 per sample (plus GST) for a total of \$105.00, or \$150.00 for the analysis of three samples from the same property (\$157.50 including GST). Three samples are recommended, and is the minimum number required in Ontario to conclude a material is not an asbestos-containing material. Payment can be made by Visa, MasterCard or cash. Please include payment with the samples (include expiry date and full name on the card if paying by credit card).

### Payment information

Visa  MasterCard

Card Number		Expiry date
Name (print)	Signature:	

### Vermiculite / ZAI Analysis Sample Information

SAMPLE#	SAMPLE LOCATION	RESULT

Authorized by: \_\_\_\_\_ Date: \_\_\_\_\_

Customer Signature MUST Accompany Request. Customer accepts Pinchin Environmental Standard Terms and Conditions for Laboratory Services (see over/next page)

<b>TO BE COMPLETED BY LAB PERSONNEL ONLY</b>		LAB REF. #:
Received By:	Date:	
Analyzed By:	Date:	



### **Pinchin Environmental Ltd. Standard Terms and Conditions for Laboratory Services**

1. **CHAIN OF CUSTODY:** The CLIENT is requested to complete the Pinchin Environmental Ltd. (PINCHIN) Sample Transmittal Form when submitting samples. The client acknowledges that PINCHIN will rely on the information on the transmittal form and will not be responsible for any erroneous results or interpretations arising from this.
2. **ACCEPTANCE OF SAMPLES:** PINCHIN reserves the right to refuse any or all samples at the sole discretion of PINCHIN including but not limited to those of unsuitable volume, or those that pose an unacceptable health or safety or environmental risk.
3. **OWNERSHIP:** Any documents produced by PINCHIN are the sole property of PINCHIN. Laboratory and analytical results issued by PINCHIN may be reproduced by the CLIENT but only in full unedited form. PINCHIN will maintain records and supporting documents for a period of three (3) years after completion.
4. **SAMPLE OWNERSHIP:** Samples accepted by PINCHIN shall remain the property and liability of the CLIENT while in the custody of PINCHIN. PINCHIN shall retain asbestos samples for a period of 3 months, following the date of analysis. PINCHIN shall extend the retention period only at the CLIENT's written request. Additional charges for storage may apply. Samples that are found to be hazardous waste may be returned to the CLIENT at the sole discretion of PINCHIN. If unreturned, following the retention period, PINCHIN will dispose of the samples.
5. **SAMPLE LOSS:** Samples received by PINCHIN staff will be handled with great care. However, in case of a sample loss, the CLIENT will supply a replacement sample. PINCHIN will analyze the replacement sample at no cost to the CLIENT.
6. **CONFIDENTIALITY and THIRD PARTIES:** PINCHIN will not provide analytical results to any party other than the CLIENT, unless the CLIENT, in writing, requests information to be provided to a third party or unless disclosure by PINCHIN is required by law. Information provided by PINCHIN is intended for client use only. Any use by a third party, of reports or documents authored by PINCHIN, or any reliance on or decisions made by a third party based on the findings described in said documents, are the sole responsibility of such third parties. PINCHIN accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted.
7. **CANCELLATION and CHANGES:** The CLIENT shall have the right to cancel or change analytical orders placed with PINCHIN, but shall be obligated to pay for any work completed and expenses incurred prior to cancellation.
8. **RESPONSIBILITIES OF PINCHIN:** PINCHIN shall perform its work in accordance with accepted laboratory standards and accepted standard operating procedures. PINCHIN reserves the right to modify methods as necessary based upon experience and/or current scientific literature. If the CLIENT requests a manner of analysis that varies from standard operating or recommended procedures, the CLIENT shall not hold PINCHIN responsible for the results. Such variations of analysis will be noted in the reports.
9. **LIMITATION OF LIABILITY:** Any work performed by PINCHIN will be conducted in accordance with industry standards. The total liability of PINCHIN or its staff whether based in contract or tort, will be limited to the lesser of the fees paid or actual damages incurred by the client. PINCHIN will not be responsible for any consequential or indirect damages even if caused by negligence of PINCHIN. PINCHIN will only be liable for damages resulting from negligence of PINCHIN. All claims by the CLIENT shall be deemed relinquished if not made within one year after analysis. No warranty is either expressed or implied, or intended by any agreement or by furnishing oral or written reports or findings.
10. **RESPONSE TO LEGAL PROCESS:** The CLIENT shall compensate PINCHIN for its services and expenses if PINCHIN is required to respond to legal process related to its services for the CLIENT. Compensable services shall include hourly charges for all PINCHIN personnel involved in the response and attorney fees and expert fees reasonably incurred in obtaining advice concerning the response, the preparation of the testifier and appearances related to the legal process.
11. **PAYMENT TERMS:** Payment is required in advance for all CLIENTs until a credit account has been established. The CLIENT shall pay in full the net amount of each invoice submitted by PINCHIN within thirty (30) days. Amounts not paid when due shall bear interest at the rate of 18% per annum from the date due until the date of payment.