KNAUF可耐福

November 29, 2006

Mr. Salomon Homsany Abadi
Rothchilt International Limited
N-510 Chia Hsin Bld.
Annex 96 Chung Shan N. Rd. Sec. 2
Taipei, Taiwan R.O.C.

Re: Shipment Of Plasterboard Under Contract No. EX-USA-20060313

Dear Mr. Abadi:

Knauf Plasterboard (Tianjin) Co., Ltd. appreciates your bringing to our attention the concerns of your customers over the smell of some Knauf Tianjin plasterboard that you imported to the United States. As I understand it from our meetings over the last several days, your customers have raised two issues: (1) does Knauf Tianjin plasterboard smell different than U.S. or other synthetic board; and (2) is there a health risk from installing Knauf Tianjin plasterboard into buildings. I apologize that it has taken Knauf Tianjin several days to respond to the questions, but these are not issues that the company has had to address previously in the context in which they were raised. Frankly, Knauf Tianjin believed that its assurances alone on the health point, in particular, may not have been convincing. Therefore, Knauf Tianjin hired a nationally recognized consulting firm to sample the plasterboard and homes in which the plasterboard was installed in order to answer your customers' questions satisfactorily.

Based on my observations of the Knauf Tianjin plasterboard, comparisons to other plasterboard used in the area and discussions with our plant in Tianjin, I am confident that the difference in smell is no more than the difference between Chinese natural gypsum plasterboard and synthetic plasterboard. The plasterboard that I was directed to as having a smell, does have a different smell than synthetic plasterboard. Put simply, it smells like the plasterboard made from natural gypsum in China and much of the plasterboard Knauf Tianjin manufactures every day.

I have attached the summary report prepared by CTEH regarding any health risk from Knauf Tianjin's paperboard. I am pleased to report that according to the CTEH testing results there are no health risks associated with Knauf Tianjin's plasterboard.

可耐福石膏板（天津）有限公司
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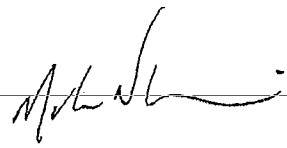
Because of the urgency expressed by you and your customers, I am copying the customers you introduced me to over the last several days on this letter. Please forward this letter and report to other customers that express similar concerns. Please contact me with any other questions or concerns that you may have. We look forward to continuing our relationship with you.

Very truly yours,



Mark Norris

cc: Mickey Coblentz

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Summary of Air Sampling Results
November 29, 2006

Summary

In response to reports of sulfur-like odors potentially associated with the use of Knauf Tianjin gypsum plasterboard, the Center for Toxicology and Environmental Health, L.L.C. (CTEH) was mobilized to the Miami-Ft. Lauderdale, Florida area to conduct an air quality investigation. CTEH performed air quality testing for a wide variety of chemicals, including sulfur-containing compounds and volatile organic compounds (VOC). The testing results were evaluated to determine if the measured compounds posed an unacceptable public health risk.

Air testing was performed in homes containing the Knauf Tianjin gypsum plasterboard and in one home containing a similar product from another supplier. Sampling of air from unused packaged product and outdoor air was also performed. Samples of bulk plasterboard manufactured by Knauf and two other Chinese manufacturers were tested for chemical composition, along with a product manufactured in the United States. The testing revealed that the Knauf Tianjin product released low levels of certain naturally-occurring sulfur-containing compounds. Testing of the bulk material revealed the likely source of these compounds was a sulfur-containing mineral known as iron disulfide. One of the other two products manufactured in China presented a similar odor and also contained the iron disulfide mineral. Based on comparison with occupational and public exposure limits, toxicology testing data, and on data regarding air concentrations from natural sources, it was concluded that measured concentrations of the detected chemicals in air were not present at levels that present a public health concern.

Site Activities

Sampling occurred between November 18 and 20, 2006. A total of five homes were sampled, one of which did not contain the Knauf Tianjin product, and one of which was not clearly identified as to the source of the installed product. Bulk samples of the Knauf Tianjin product both before and after installation were obtained, along with samples from sources other than Knauf Tianjin. These alternative sources included two plasterboard products also manufactured in China and a product manufactured in the United States. These samples were sent to an independent laboratory for analysis of the composition of the products.

Air samples included both "real-time" and integrated samples. Real-time samples utilized instruments or methods that provided virtually instantaneous readings of several compounds, including: hydrogen sulfide, sulfur dioxide, volatile organic chemicals, mercaptans, and carbon disulfide. The results of all real-time samples were negative. Integrated samples were collected over an identified period of time and were sent to an independent laboratory for analysis for sulfur dioxide, sulfur containing compounds, and volatile organic compounds. These laboratory methods test for thousands of compounds that may be present in the air with low part per billion detection limits. The results of the integrated samples will be discussed in more detail below.

Results

No sulfur dioxide was detected in any samples. Carbonyl sulfide and carbon disulfide were detected in all samples associated with the Knauf Tianjin product. Carbonyl sulfide was also detected in the outdoor air sample. One home had a very low level of methyl mercaptan detected in the air. Each of these chemicals is

naturally occurring, with the greatest natural source being ocean water. Each has also been identified as a byproduct of bacterial action on construction debris containing drywall wastes.

The highest carbon disulfide level detected in any sample (14 ppb[1]) was well below the USEPA reference concentration (220 ppb), which was established to protect the general population, including sensitive individuals. An odor threshold of approximately 100 ppb has been reported. The recommended occupational exposure level for this chemical is 1,000 ppb. Carbon disulfide has been detected in human breath at an average concentration of 24 ppb. Levels of carbon disulfide were not detected at a level that presents a health concern.

There are no regulatory or guideline levels recommended for workplace exposures to carbonyl sulfide. However, the highest detected concentration in any sample (16 ppb) is hundreds of times below levels shown to cause no effects in experimental animals. The state of Louisiana has an 8-hour average outdoor air exposure standard for this chemical of 237 ppb. The odor threshold has not been reported for this chemical. Carbonyl sulfide has been detected in human breath at an average concentration of 92 ppb. Levels of carbonyl sulfide were not detected at a level that presents a health concern.

One sample contained a very low level of methyl mercaptan. The level was below the method reporting limit, and the concentration was estimated at 1.8 ppb (3.6 $\mu g/m^3$). The recommended occupational exposure limit for methyl mercaptan is 500 ppb. Methyl mercaptan has been found in environmental air at concentrations up to 4 ppb, although none was detected in the outdoor air sample collected in Miami (reporting limit of 5 ppb). The following states have ambient air guidelines for methyl mercaptan: New York (1.7 ppb – annual); Virginia (8 ppb – 24-hour); North Dakota (5 ppb – Maximum Acceptable); Connecticut (10 ppb); Maine (1 ppb – long term); and Michigan (10 ppb – 1 hour). The USEPA has not developed a final reference concentration for this chemical, but has published a provisional RfC of 1 ppb. An odor threshold of 1.6 ppb has been reported for this chemical. Individuals with halitosis (bad breath) have been shown to have elevated breath concentrations of this chemical. Given that this chemical was not detected in three of the four homes containing the Knauf product, nor in the air from packaged Knauf product, we cannot conclude that methyl mercaptan originated from the Knauf material. Regardless, methyl mercaptan was not detected at a level that presents a health concern.

Hydrogen sulfide was detected in all of the samples collected during this investigation, at concentrations ranging between 2.3 to 4.1 ppb. However, it was also present in the outdoor air sample at a concentration of 3.2 ppb. The highest measured level (4.1 ppb) was taken from air inside the packaging of unused product. The next highest level (3.9 ppb) was obtained from a home with a plasterboard product from a U.S. manufacturer. These data indicate that the homes built with the Knauf Tianjin product did not have elevated levels of hydrogen sulfide.

Chemical analysis of the bulk plasterboard indicates that it contains a naturally-occurring iron disulfide mineral (e.g., pyrite). Chemical analyses suggest that this mineral appears to be the source of the sulfur-containing compounds emitted from this product. Laboratory observations indicated that one of the other plasterboards from Chinese manufacturers had a similar odor as the Knauf Tianjin product. This product also contained the iron disulfide mineral.

[1] ppb stands for parts per billion, which is equal to one part of chemical by volume per one billion parts of air.

The only volatile organic compounds consistently detected in indoor air samples from the various sources measured were well below health-based levels. These chemicals (isopropyl alcohol, acetone, toluene) are commonly detected in indoor air samples and can originate from multiple common sources.

Conclusions

These data indicate that certain naturally-occurring sulfur-containing compounds can be emitted from the Knauf Tianjin product at concentrations higher than present in background air. However, based on comparison with occupational and public exposure limits, toxicology testing data, and existing data regarding naturally-occurring air concentrations, the measured concentrations in homes containing the Knauf Tianjin product are not at levels that should be considered a public health concern.