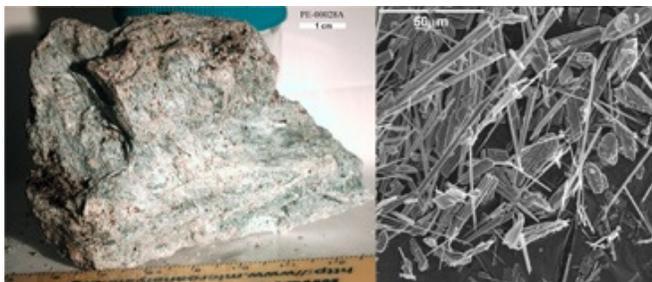


The purpose of this fact sheet is to describe EPA's course of action for establishing Libby Amphibole asbestos (LA)-specific toxicity values. It also summarizes site history and explains the role of toxicity values in risk assessment.

Site History and Cleanup Progress

The Libby Asbestos site in northwest Montana includes the towns of Libby and Troy. In the 1920s, the Zonolite Company formed and began mining vermiculite at a mine seven miles northeast of Libby. In 1963, W.R. Grace bought Zonolite's mining operations and expanded mining activities. Vermiculite was widely used in building insulation and as a soil conditioner. Both the ore and the processed vermiculite from the W.R. Grace mine were contaminated with a form of asbestos, now referred to as LA. The mine was closed in 1990 for economic reasons.



Asbestos consists of microscopic fibers that are hazardous to humans when inhaled. Many people in Libby have died of illness caused by LA exposure.

EPA determined that an imminent and substantial endangerment to public health exists in Libby due to LA contamination. Since 1999, EPA has worked diligently to investigate and remove contamination and reduce health risks.

EPA has made progress in reducing the threat of asbestos on the ground and in the air. The most recent ambient air quality report published in 2009 indicates that LA air concentrations are approximately 10,000 times lower than the reported air concentrations in downtown Libby when the mine and milling plants were operating.

As of October 2010, EPA has safely removed over 825,000 cubic yards of asbestos-contaminated soil from 1,463 commercial and residential properties in Libby. The Montana Department of Environmental Quality (MDEQ) also has conducted removal actions at 84 properties in Troy.

Over 22,100 cubic yards of vermiculite attic insulation and 43,160 cubic yards of contaminated debris have also been removed from the Libby and Troy area. EPA continues to implement removal actions to reduce exposures and to collect additional data to support the risk assessment.

LA Toxicity Values

The Libby community requested that the final risk assessment and cleanup decisions be based on LA-specific toxicity data. EPA uses its Integrated Risk Information System (IRIS) process for adopting toxicity values to make sure that the toxicity values represent the best science available. While the IRIS process moves forward, the Agency will make public draft LA toxicity values that resulted from scientific review within EPA. This information will serve as a basis for starting discussions with the community about how the draft values affect our understanding of site risks and options for addressing them.

There are currently no LA-specific toxicity values. An IRIS value for asbestos was established in 1986 for cancer effects. This value was established based on studies of the health effects of exposure to a range of types of asbestos, including chrysotile, tremolite, amosite and crocidolite. Both lung cancer and mesothelioma were considered in the 1986 analysis. EPA does not have a quantitative estimate of noncancer effects of LA or other asbestos in IRIS. EPA toxicologists have worked over the past years to develop toxicity values for LA including the following:

1. A cancer *Inhalation Unit Risk* or *IUR* value quantifies the exposure-response relationship for cancer from breathing LA in the air. Asbestos-related cancer health effects include malignant mesothelioma, an incurable, fatal cancer of the chest cavity, and an increased risk of all lung cancers.
2. Non-cancer risk evaluations are based on a value referred to as the *Reference Concentration* or *RfC*. This is an estimated exposure that is likely to be without an appreciable risk of harm. Asbestos-related non-cancer illnesses include pleural abnormalities and asbestosis, a debilitating respiratory illness caused by progressive scarring of lung tissues. The increase in pleural anomalies in workers is the basis for the draft RfC value.

The data used to develop LA-specific toxicity values were obtained from Libby miners and others that were exposed to LA at work, including those at the Marysville, Ohio plant, one of the plants that processed Libby vermiculite.

Components of the Libby Risk Assessment

A Superfund risk assessment is a formal, scientific process, led by experienced toxicologists, to quantify health risks to residents, workers, and recreationalists. EPA's risk assessment process has four steps:

1. **Data collection.** Compiles data on site history, exposure potential, and contaminant distribution.
2. **Exposure assessment.** Estimates how much and in what ways exposures may occur. Inhalation of LA is the major pathway for human exposure.
3. **Toxicity assessment.** Addresses the potential of contaminants to cause harmful effects in humans.
4. **Risk characterization.** Estimates the risk to human health using data from both the exposure and toxicity assessments.

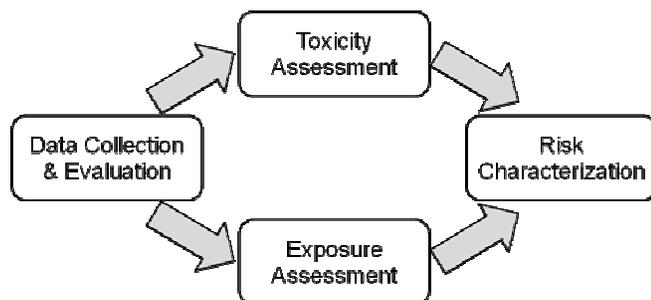
Libby Toxicity Assessment

The toxicity assessment is a key part of the human health risk assessment that determines the relationship between the dose of Libby amphibole and its biological response – for both cancer and non-cancer effects.

The Libby Human Health Risk Assessment

Combined with site-specific exposure information (including activity-based sampling data), the LA-specific toxicity values will be used to estimate health risks in Libby. EPA will develop a risk assessment that reflects the cumulative exposures experienced by Libby residents. This risk assessment will evaluate exposures to adults, teenagers, and children conducting a variety of activities throughout the Libby Valley such as housework, playing in the yard or at school, walking, bicycling, or working in an office or outside.

Four Steps of Risk Assessment



Next Steps in the LA Toxicity Value Process

Since February 2011, EPA's scientists nationwide have been reviewing the data and methodologies used to develop draft toxicity values. These values will be submitted to other federal agencies for peer review in spring 2011.

The current schedule anticipates that the IRIS review process will be completed in 2012. While the IRIS process is underway, EPA will use draft toxicity values to begin conversations with the Libby and Troy residents about remedy options.

Moving Forward with Cleanup

EPA will carry on its efforts to clean up years of contamination left by W.R. Grace. While there is much less asbestos contamination in Libby than there was 10 years ago, there are still potential risks from exposure to asbestos-contaminated vermiculite. That is why EPA is taking a combined approach of "action" (indoor and outdoor cleanups at targeted properties) and "investigations and studies" to continue to reduce exposure and support final remedy decisions.

EPA is committed to reducing exposure to LA in Libby and will continue to work closely with our federal, state and local partners as cleanup efforts progress. The Libby cleanup will remain one of the Agency's highest priorities in the years ahead.

For additional information about the Libby Asbestos Toxicity and Risk Assessments, please visit EPA's Libby website at www.epa.gov/libby/ or contact:

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