

# GOOD WORKING PRACTICES HIGH TEMPERATURE INSULATION WOOLS (HTIW)

**HTIW**  
COALITION



November 2015

# WHAT ARE HIGH TEMPERATURE INSULATION WOOLS?

HTIW include: Alkaline Earth Silicate (AES) wools, Refractory Ceramic Fiber (RCF) wools, and Polycrystalline (PCW) wools.

## High Temperature Insulation Wools



High Temperature Insulation Wools are used in applications from 600°C up to 1800°C.

## HTIW brand names you may recognize include:

- AES: Insulfrax<sup>®</sup>, Isofrax<sup>®</sup>, Superwool<sup>®</sup>, Calsitra, Supermag<sup>®</sup>
- RCF: Fiberfrax<sup>®</sup>, Cerafiber<sup>®</sup>, Kaowool<sup>®</sup>, Alsitra, Maxwool<sup>®</sup>, Inswool<sup>®</sup>
- Polycrystalline: Saffil<sup>®</sup>, Maftec<sup>®</sup>, Altra<sup>®</sup>, Fibermax<sup>®</sup>, Denka<sup>®</sup>

## HTIW are USED FOR:

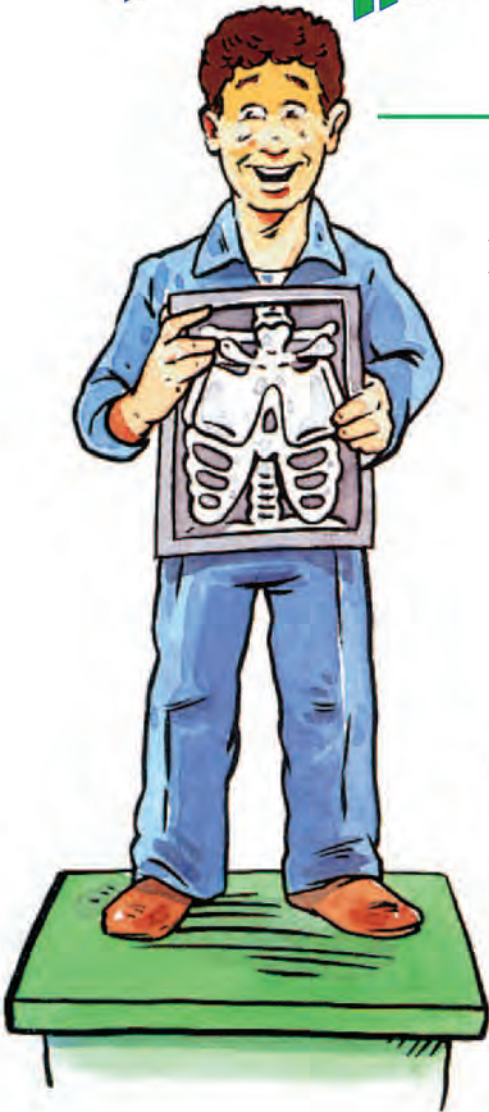
- Thermal insulation in industrial furnaces, kilns, process heaters and boilers.
- Pipe, ductwork and vessel insulation.
- Heat shields in a variety of industries.
- High temperature gaskets, seals and expansion joints.
- Insulation for the aerospace, automotive and appliance industries.
- Fire protection systems and firestops.



## In use HTIW:

- Contribute to protecting people and property from excessive heat
- Reduce greenhouse gas emissions
- Reduce energy usage
- Improve efficiency of furnaces and process equipment

# HEALTH & SAFETY INFORMATION



HTIW can cause itching of the skin due to the mechanical effects of coarse fibers. The nose, throat and eyes can also be affected but these effects last only a short time.

Many HTIW products are naturally dusty and can release inhalable fibers during handling so dust levels should be controlled.

Consult the SDS for information on after service material.

**Proper workplace protection measures and good work hygiene practices should be used when working with all HTIW products.**

# HOW TO WORK SAFELY WITH HTIW

**ALWAYS KEEP AIRBORNE DUST TO A MINIMUM**

## **When handling or installing HTIW products:**

- Organize your work space to minimize handling and dust generation.
- Use local dust extraction systems to minimize airborne dust.
- Clear away waste offcuts and debris regularly.
- Do not use compressed air for cleaning up.
- Clean up with vacuum cleaner or alternatively, wet down the area before sweeping.
- Avoid dust becoming air blown.
- Use appropriate personal protection equipment. (See page 5).



## **When removing used HTIW products:**

- Where possible dampen the insulation with a water spray before removal.
- Clean the work area frequently with a vacuum cleaner or wet sweeping.
- Place all waste in plastic bags or closed containers, seal and label.
- Follow proper disposal procedures as listed in the Safety Data sheets (SDS).



# USE YOUR PERSONAL PROTECTION EQUIPMENT



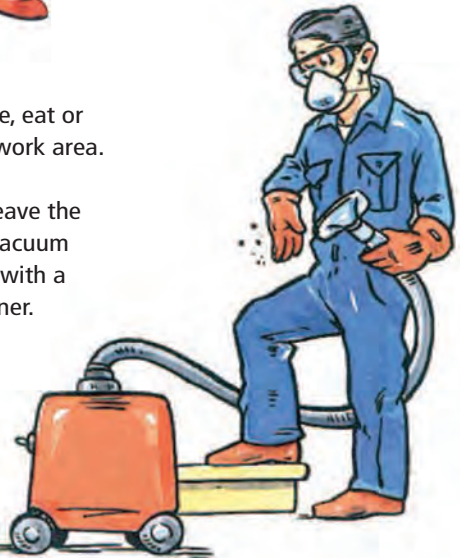
- Wear appropriate work clothing.
- When required, use appropriate respirator (minimum N95) following your employer's respiratory protection program.
- Make sure you are trained in the proper use of your respirator (minimum N95).



- Wash work clothes separately from other clothing<sup>1</sup>.



- Do not smoke, eat or drink in the work area.
- Before you leave the work place vacuum your clothes with a vacuum cleaner.



- If you have any doubts consult the supplier's SDS.

<sup>1</sup> The HTIW Coalition recommends that workers wear protective equipment (e.g., gloves) as necessary to prevent skin irritation. Washable or disposable clothing may be used. If possible, do not take unwashed clothing home. If soiled work clothing must be taken home, employees should be informed on the best practices to minimize non-work dust exposure (e.g., vacuum clothes before leaving the work area, wash work clothing separately, rinse washer before washing other household clothes).

# MORE TIPS ON WORKING SAFELY

## MAKE SURE YOU GET THE PROPER TRAINING

Your employer should provide health and safety training for you in order to do your job properly. After training, you should be familiar with:

- Possible hazards associated with HTIW products.
- Work practices that can protect you from possible hazards.
- Safety Data Sheets and warning or caution labels.
- Protective equipment, its use and limitations.

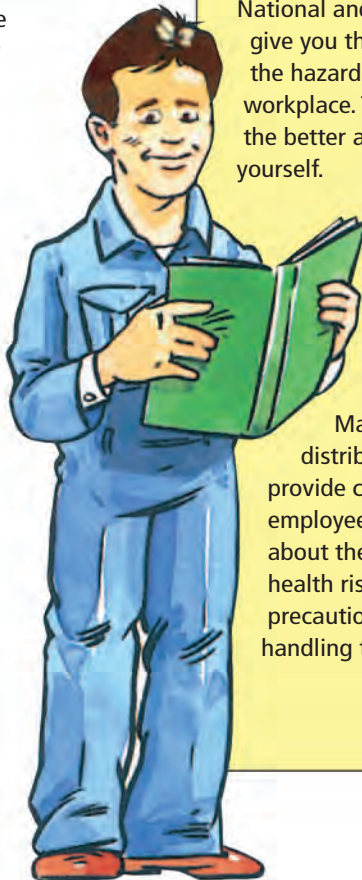
If you have any questions about any of these matters or if you feel you need further training, don't hesitate to ask your employer for help.

## LEARN FROM YOUR SAFETY DATA SHEETS (SDS)

National and international laws give you the right to know about the hazardous substances in your workplace. The more you know, the better able you are to protect yourself.

One of the ways you can learn is by reading the SDS for all the materials with which you work.

Manufacturers and distributors are required to provide customers and employees with information about their products, associated health risks and any special precautions to be taken when handling them.





## EXPOSURE LIMITS FOR HTIW

When working with HTIW products the aim should always be to minimize exposure to airborne fibers. The U.S. Occupational Safety and Health Administration (OSHA) does not have a specific occupational exposure limit for HTIW. OSHA's "Particulate Not Otherwise Regulated (PNOR)" standard [29 CFR 1910.1000, Subpart Z, Air Contaminants] applies generally (Total Dust 15 mg/m<sup>3</sup>; Respirable Fraction 5 mg/m<sup>3</sup>). For AES fiber, the supplier has found that it is generally feasible to control occupational fiber exposure to 1 fiber/cc (f/cc) or less. For RCF only, the HTIW Coalition has established a Recommended Exposure Guideline (REG) of 0.5 f/cc. The State of California has established a Permissible Exposure Limit of 0.2 f/cc for RCF. In addition, the American Conference of Governmental Industrial Hygienists (ACGIH) has established a threshold limit value (TLV) of 0.2 f/cc for RCF. Dust concentrations should be kept as low as practically possible.

There are also exposure limits for crystalline silica (including quartz and cristobalite). These must be observed when maintaining or removing used RCF and AES wools which have been exposed to temperatures in excess of 900° C. Again please see the SDS for further information.

**DO YOU HAVE  
ANY QUESTIONS**



We hope you have found this information helpful. If you have any questions, ask your employer to provide further information about HTIW products, industrial hygiene monitoring and safe work practices. If you would like more technical information on respiratory protection and health studies, ask your employer or contact the HTIW Coalition or one of the HTIW Coalition member companies.  
<http://www.htiwcoalition.org>



# HOW SAFELY DO YOU WORK?



HTIW Coalition:  
Representing  
the High  
Temperature  
Insulation  
Wool Industry.

**When you work with HTIW products, do you use safe work practices?  
To find out, answer the following questions:**

	YES	NO
I wear goggles or safety glasses with side shields when conditions require it.	<input type="checkbox"/>	<input type="checkbox"/>
I wear a respirator (minimum N95) when conditions require it.	<input type="checkbox"/>	<input type="checkbox"/>
I perform a fit test for my respirator (minimum N95) every time I wear it.	<input type="checkbox"/>	<input type="checkbox"/>
I wear appropriate work clothing.	<input type="checkbox"/>	<input type="checkbox"/>
I wear protective gloves when conditions require it.	<input type="checkbox"/>	<input type="checkbox"/>
I vacuum my work clothes before removing them.	<input type="checkbox"/>	<input type="checkbox"/>
I never shake my work clothes.	<input type="checkbox"/>	<input type="checkbox"/>
I know the best practices to minimize non-work dust exposure.	<input type="checkbox"/>	<input type="checkbox"/>
A copy of the SDS is available to me.	<input type="checkbox"/>	<input type="checkbox"/>
If I get dust on my skin, I wash with warm water.	<input type="checkbox"/>	<input type="checkbox"/>
I have read the product warning or caution labels.	<input type="checkbox"/>	<input type="checkbox"/>
I know how to get more information on HTIW.	<input type="checkbox"/>	<input type="checkbox"/>

**If you answer "no" to any of these questions, speak to your supervisor/employer.**

HTIW Coalition