

SAFE USE AND HANDLING OF LIQUID FORMIC ACID

DISCLAIMER: We, the publisher and author, waive all claims of liability as anyone using this information does so at their own discretion and responsibility. This abstract was created from various government and manufacturers publications and regulations. You should read the following documents:

- CANADA **MiteGone®** REGISTRATION NO. 31315 PEST CONTROL PRODUCTS ACT
- REGISTRATION ALLOWS USE OF UNIVAR 85% AFTER THINNING TO 65% OR MEDIVET 65% FA.
- Material Safety Data Sheet
www.proscitech.com.au/catalogue/msds/c350.pdf
- Respirators: Northern Safety Products.
Cranston RI USA. 1-800-430-4

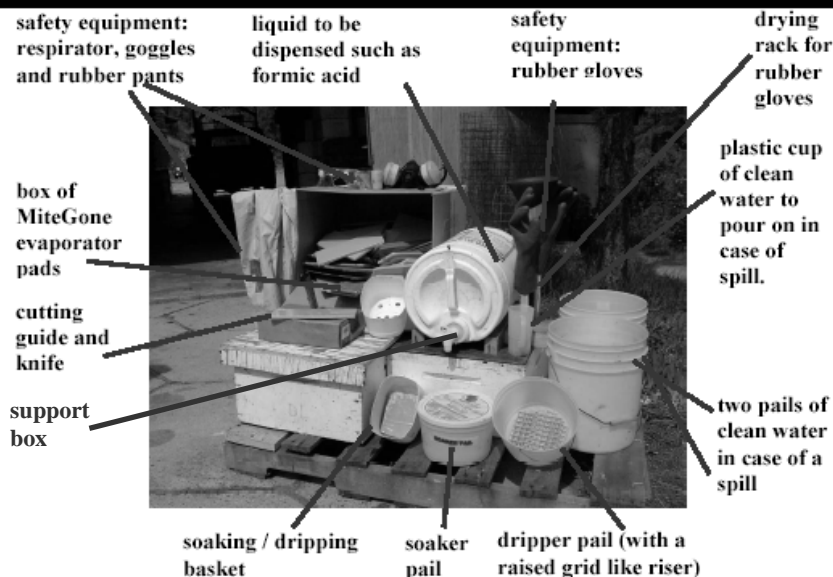
SAFETY INSTRUCTIONS WHEN USING MITEGONE WITH 65% LIQUID FORMIC ACID AS A TREATMENT FOR HONEY BEES INFESTED WITH VARROA OR TRACHEA MITES AND FOR THE DETECTION OF VARROA MITES IN HONEY BEE COLONIES.

DANGER:
CORROSIVE TO SKIN AND EYES. USE FORMIC ACID: 65% IN WATER. READ THE LABEL BEFORE USING.
KEEP OUT OF REACH OF CHILDREN.

RESPIRATOR with an organic vapor cartridge and dust / mist filter is recommended for outside use only. Example: North 7700 half masks 7583-P100 Cartridge. Replace cartridge according to OSHA recommendations on www.osha.gov or before each treatment period in the spring and the fall. **If you can smell acid inside the mask replace cartridge immediately.**

MiteGone™ Pad Prep Station

The station should be set up down wind in the yard. Use a solid base such as a pallet to ensure an even level stable surface. To raise the materials from the ground, set them on top of boxes with securely fixed covers. Use a bee box or a stool to sit down when cutting and filling the MiteGone pads.



DO NOT UNWRAP THE PADS

PRACTICALITY IN SAFETY. FOR INSTALLING PREFILLED PADS FROM KITS TO HIVES:

- Only medium thick rubber gloves so you have comfort feeling in your hands are required. Carry the filled pads below your waistline.
- Incorporate the treatment into your management. Prepare all hives in bee yard for treatment so if you want to wear respirator: You wear it for a short time

FOR HANDLING, THINNING, FILLING DRY KITS, OR REUSE:

- Respirator with organic vapor cartridge and dust/mist filter: North safety product: 7700 half mask & 583-P100 cartridge is recommended for outside use. Rubber gloves, boots and thin rubber (rain) pants under overalls are required.
- **NEVER** work with acid inside.
- **ALWAYS** pour acid into water.
- Never pour acid from one container to another above your waistline or lift the barrels using a forklift above you. Use loading docks and always have the barrels or kegs on solid ground. Use the “submerged hose” method, with a tap so you can thin acid to-65% from barrels to small kegs without open pouring and funnels.
- Always use a scale on the ground for thinning and measuring in grams, kilos or pounds rather than measuring volume.
- Acid is hazardous material and cargo. The only safe and legal way to transport acid is in thick walled 25kg kegs that the acid is sold in or in containers approved by regulations.
- Never leave the tap on the container during transport.

FILLING READY TO FILL KITS OR REUSE OF PADS

- Pour outdoor 65% formic acid into plastic bag lined box housing pads.
 - See appropriate kit for amount and instruction.
- Close bag as it was folded and rolled, or tied with rubber tie. Flip package upside down then right side up, repeat several times. Pads are ready to use
- For reuse set up the filling station in the bee yard down wind on a pallet on the ground.
 - All filling is done below the knee level in the outdoor breeze while sitting in front of the filling station.
 - After the yard is done, strain and pour unused acid back into the keg, replace the tap with the proper plug, wash all pails, baskets and acid laced equipment before going into the next yard.

FIRST AID: WATER! WATER! WATER!

- Have a water hose with clean running water ready. I bee yards have two pails of water, one open with a pitcher ready to dilute any spray or spills, and one sealed in case the open one accidentally tips over.

STORING THE ACID:

- Store the acid in the original containers and the pre-filled pads in acid safe containers outside in a cool, dry, well-ventilated secured storage area with a strong locking mechanism. A non-working but newer refrigerator with a good seal and back wall top vent is the best. Just add a locking device.
- Make sure there are no children or pets in the area when opening the storage refrigerator. Also, make sure the acid storage does not leak when closed as not to cause injury to children or animals.
- Use caution when opening the acid container, especially in warm weather, as pressure may have built up. Avoid heat, sparks and open flames. Store away from sulfuric acid and oxidizing materials. Formic acid vapors are heavier than air, and may collect in low places, or flow to an ignition source and flash back. Vapor concentrations of 18 to 57% in air are combustible, and pose a moderate fire hazard.
- Do NOT use chest freezers, barrels, or other containers where acid fumes can accumulate and cause an explosion or injury to anyone leaning into it retrieving pads or kegs filled with acid. From a refrigerator, any fumes accumulated will be released in your presence.

DISPOSAL:

Absorbent pads containing formic acid should be dried and disposed of according to government instructions. For information on the disposal of unused, unwanted or damaged product and the cleanup of spills, contact the regional office of Environmental Protection. Follow government instructions for any required cleaning of the formic acid container prior to its disposal. Dispose of the container in accordance with government requirements.

Use common sense and follow government and manufacturer's instructions on handling acid.

****DANGER****

KEEP OUT OF REACH OF CHILDREN

- Corrosive to eyes and skin by direct contact or by exposure to vapors. Harmful or fatal if swallowed. Potential skin sensitizer. Do not get in eyes or on skin or clothing. Do not breathe vapors – use a respirator. Wear goggles or face shield, chemically-resistant gloves, apron/pants and boots when handling liquid formic acid. Work outdoors, and always stand upwind of the use location. If a strong vinegar odor is encountered, area should be evacuated until the vapors have dissipated.
- When applying, do not eat, drink or smoke. Wash skin thoroughly with soap and water after handling. Remove contaminated clothing immediately if contaminated by splash or spill. Store and wash contaminated clothing separately from household laundry.
- To prevent accidental exposure, post appropriate signs to prevent opening of storage.
- Do not contaminate water supply, ponds, lakes or streams.

FIRST AID: WATER WATER WATER

- Have a first aid water hose with clean running water or two pails of water, one open and one sealed, with a pitcher ready to dilute any spray or spills.
- **IF ON SKIN:** Remove contaminated clothing immediately. Wash affected area with soap or mild detergent and large amounts of water. If chemical burn develops, cover area with a sterile, dry dressing, bandage securely and contact a physician immediately.
- **IF IN EYES:** Wash eyes immediately with large amounts of water. Cover with sterile bandages. Contact a physician immediately.
- **IF INGESTED:** Do not induce vomiting. Drink large quantities of water or milk. If vomiting occurs, administer fluids repeatedly. Never give anything by mouth to an unconscious person. Contact a physician or Poison Control Center immediately. Take container or product name with you to the hospital emergency department or physician.
- **IF INHALED:** Remove person to a safe, uncontaminated area. If breathing has stopped, clear airway and start artificial respiration. Never give anything by mouth to an unconscious person. Get immediate medical attention. Take container or product name with you to the hospital emergency department or physician.

LEGAL LIABILITY:

- **Notice to User:** It is an offense under the Pest Control Products Act to use a control product under unsafe conditions.
- Generally, you cannot store or work with acids in residential areas. Check with your local governments.
- You will be liable for any injury to children, people (including the blind), or animals caused by acid. Make sure your acid storage is idiot proof.
- You may be wise to offer custom treatment and training to hobbyists helping them avoid mistakes..