FOR CONTROL OF:
- Ants
- Bedbugs
- Cockroaches
- Fleas
- Spiders
- Ticks

BIO-DEGRADABLE
RESIDUAL ACTION
NEUTRAL ODOUR
The micro-capsules are formed by Interfacial Emulsion Polymerisation using a new Cross Linking Agent (from the Glycoluryl family) forming the capsule wall at the inter-phase of the oil droplets with the continuous water phase.

The cross-linked polymer is a:
Glycol-urylurea poly-urethane
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

The emulsification, using a new tool for homogeneous distribution of the oil droplets, produces a droplet size that is the inner diameter of the micro-capsule containing an oil soluble catalyst for curing the inert surfaces of the formed wall.

The final particle size of the suspended micro-capsule is a function of the amount of wall forming material used during the process of micro-encapsulation.
Micro-capsules frozen at -70°C showing the frozen protective colloid (40,000 X electronic microscope)
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

The Active Ingredient inside of the micro-capsules contains an inert fluid that modifies the mobility and the diffusion through the pores of the capsule wall.

The Active Ingredient is not released as far as it is in suspension in water due to the presence of a special protective colloid, that controls the osmotic pressure. Upon application and drying of the surface the Active Ingredient starts releasing by diffusion.
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

Micro-capsules releasing active ingredient by disruption or diffusion (1.000x enlarged)
Big capsules produced specially to show the release of the A.I. Not an example of the actual commercial product
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

**BIO KILL® EXTRA GT**

<table>
<thead>
<tr>
<th></th>
<th>SLOW</th>
<th>SLOW-MEDIUM</th>
<th>MEDIUM</th>
<th>FAST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wall type</td>
<td>glycolurlyurea</td>
<td>glycolurlyurea</td>
<td>glycolurlyurea</td>
<td>glycolurlyurea</td>
</tr>
<tr>
<td>Wall thickness</td>
<td>102 nm</td>
<td>102 / 60 nm+</td>
<td>60 nm</td>
<td>16,5 nm</td>
</tr>
<tr>
<td>Release time</td>
<td>6 –8 weeks</td>
<td>4-6 weeks+</td>
<td>2-4 weeks</td>
<td>0,5-1 week</td>
</tr>
<tr>
<td>Residual activity*</td>
<td>up to 12 weeks</td>
<td>up to 10 weeks+</td>
<td>up to 8 weeks</td>
<td>up to 5 weeks</td>
</tr>
</tbody>
</table>

*Residual activity depends on environmental conditions
+The SLOW-MEDIUM sample is a 1:1 mixture of SLOW and MEDIUM capsules, release time and residual activity are calculated values.

**BIO KILL® EXTRA GT** is a proprietary combination of the slow, medium and fast release allowing a very specific mode of action, with a very fast KD and excellent residual effect.
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

Kinetics of SLOW, MEDIUM and FAST release. The onset of activity is related to the speed of release and reverse proportional to the release time.
Exclusive Micro-encapsulation technology is applied to surfaces at the rate of 90,000 micro-capsules per 100 square cm.
Micro-encapsulated particles of 2μm average maintain their shape longer, remaining active on different types of surfaces, even when exposed to outdoor conditions.
**BIO KILL® EXTRA GT** achieves the same profile of activity with a lower rate of Active Ingredient, minimising environmental impact, but with control over 30 pest species. Approved for indoor and outdoor use on both porous and non-porous surfaces with no time gap between the onset of the activity and the release of A.I.

**BIO KILL® EXTRA GT** composition:
Lambda Cyhalothrin (Pyrethroid) 0.68 g/ℓ
Prallethrin (Pyrethroid) 0.075 g/ℓ
As RTU in a form of a soft gel formulation concept. Stabilised for a long shelf life, it is the safe answer to a very effective formulation.
The new micro-encapsulation process is modified in order to obtain different particle sizes and in consequence different wall thickness and different release time, changing the mode of action and the residual activity.

*Bio Kill® Extra GT* works as a fast acting insecticide (fast KD like a EW) with a remarkable residual activity. The porosity of the wall is maintained but the speed of action and residual is modified to tailor to the specific application.
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

Previous used capsules in comparison to the ones used by BKE GT

New smaller and more homogeneous capsules used for BKE GT of the latest technology.
**BIO KILL® EXTRA GT** releases the required killing amount of A.I. right from the beginning, staying minimal 5, but up to 11 weeks*, in the required activity range to kill and control insects. At the same time it does not “contaminate” the environment. Once BK EXTRA GT does not release enough A.I. any longer it will stop activity faster than BKE.

* Under perfect laboratory conditions
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

**BIO KILL® EXTRA GT TOXICOLOGY**

**READY –TO-USE:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Value</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>&gt;5.000 mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>&gt;5.000 mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>&gt;5.000 mg/m3 (4h)</td>
<td>Rats</td>
</tr>
<tr>
<td>Eye irritation</td>
<td>“non-irritant”</td>
<td>Rabbits</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>“non-irritant”</td>
<td>Rabbits</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>“non-irritant”</td>
<td>Guinea Pigs</td>
</tr>
</tbody>
</table>

**CONCENTRATE:**

<table>
<thead>
<tr>
<th>Test Type</th>
<th>Value</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral LD50</td>
<td>300 –2.000 mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Dermal LD50</td>
<td>&gt; 2.000 mg/kg</td>
<td>Rats</td>
</tr>
<tr>
<td>Inhalation LC50</td>
<td>&gt; 2,5 mg/m3 (4h)</td>
<td>Rats</td>
</tr>
<tr>
<td>Eye irritation</td>
<td>“non irritant”</td>
<td>Rabbits</td>
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</tbody>
</table>
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

*BIO KILL® EXTRA GT* contains:

- Lambda Cyhalothrin micro-encapsulated as a Killing agent.
- Prallethrin as EW emulsion oil in water for KD and better film distribution.
- Protective colloid to keep the product stable/non-release for the entire shelf life.
- UV protection for improved stability upon spraying.
- Film formers to improve the residual activity for very small microcapsules.
NEW PATENTED MICRO-ENCAPSULATION TECHNOLOGY

P O Box 50150 Randjesfontein [Circa:1683]  South Africa.
Tel: 086 111 2661  |  Cell: 083 264 7944

Web site: www.biopc.co.za
E-mail: mike@quadex.co.za

Registration details:
Reg. No L9013 Act No. 36 of 1947