



**RYE PHARMACEUTICALS PTY LTD**

**BURNAID<sup>®</sup>**



## TECHNICAL GUIDE

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## HISTORY of BURNAID

Serious burns to forest fire fighters in the 1960's began a crusade That eventually led to the formation of Rye Pharmaceuticals. Concerned by the danger to fire fighters, Robert Everingham- Rye Pharmaceuticals founder- began experimenting with a gel – Impregnated blanket which he believed could give protection from the intense heat generated by bush fires.

Using a woolen blanket as the carrier, his water-based gel was tested by Australian fire stuntmen and the CSIRO research laboratories. Protected by a layer of gel, stuntmen doused themselves in fuel which was then set alight. Despite the heat, the gel proved effective in keeping them cool for a period of time, and quickly became the number one choice for stuntmen involved in fire scenes. It's popularity spread and now Burnaid stunt gel has been used in such epic films as Mad Max, Braveheart and James Bond movies. Such is the extent of the stunt gel's cooling powers, stuntmen complain of becoming chilled after live fire scenes!

Extensive testing further refined the gel-impregnated blanket to add the therapeutic benefits of pain relief and infection control for the fire victim, as well as coolness – the fore runner of the widely accepted gel fire blanket.

In 1983, Rye Pharmaceuticals was formed to broaden its field of research and market the gel-impregnated blankets. Further research showed that the anti-microbial pain relieving and healing properties of the burn gel were also beneficial for treating other skin conditions.



## WHAT IS BURNAID AND HOW DOES IT WORK?

The Burnaid range consists of sterile gel impregnated burn dressings and sachets and tubes of gel, for the immediate first aid treatment of burns. Burnaid rapidly cools the burn helping to prevent further tissue damage and aid the healing process, and offers the patient rapid and ongoing pain relief.

Burnaid Gel consists of in excess of 90% water trapped in a proprietary gel, containing a small percentage of Melaleuca Oil – a naturally occurring substance, steam distilled from the leaves of the Australian Melaleuca alternifolia tree. Melaleuca Oil is a proven antiseptic, which exhibits local anaesthetic and anti-inflammatory properties.

The Burnaid Dressing consists of a 3mm thick pad of open cell foam impregnated with the Burnaid gel. When placed on a burn, a 3mm layer of gel is held on the skin.

From the patient's perspective, they are afforded almost immediate pain relief from the cooling gel and the anaesthetic properties of the Melaleuca Oil. The cooling property of the dressing helps to halt the burn progression and minimizes further tissue damage. Furthermore being in excess of 90% water, the Dressing re-hydrates the burn. Burnaid Dressings are sterile and exhibit mild biocidal properties – helping to prevent secondary infection.

From a management perspective, Burnaid Dressings provide an effective and simple way of relieving pain and treating burns. The dressing is placed on the burn and stays in-situ for up to two hours. There is no requirement to keep irrigating the burn, nor is there any 'run-off'. Furthermore the need to administer narcotics for pain relief can be greatly reduced. The Dressing doesn't disguise the extent of the burn. When the burn needs to be further examined, the non-adherent dressing simply lifts off and any residual gel rinsed off.

The Burnaid Dressing allows for easy transport to medical attention, as the gel stays 'in-situ' on the skin far better than chilled-water irrigated dressings. Furthermore as the first response treatment in accident and emergency wards or ER's, the Dressing need only be applied once - saving nursing resources and time. The Dressing has many other practical benefits - especially where clean cold water is not readily available.

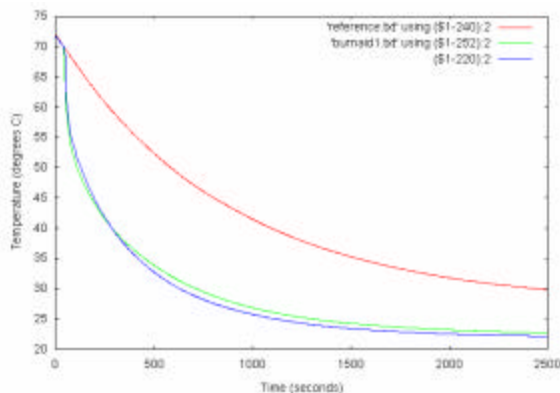
## COOLING

Recent clinical studies published in Burns, conducted using Melaleuca alternifolia Hydrogel dressings, compared their performance against tap water as a coolant, for fresh deep partial thickness hot water burns in a porcine model. Clinical and histological assessment at 21 days indicated more rapid healing in both the Melaleuca Hydrogel Dressing and the water-cooled burns compared to the untreated controls. Effective cooling of the burn wound and an increased rate of wound healing was achieved by both repeated tap water compresses and by immediate or delayed application of Melaleuca Hydrogel Dressings. The study concluded that cooling using a Melaleuca Hydrogel Dressings is an effective means to reduce tissue damage and increase wound healing.<sup>i</sup>

Heat dissipation testing conducted on Burnaid 10x10cm dressings at Macquarie University Sydney, demonstrated their ability to act as a 'heat sink'. A block of material simulating tissue was heated. At this point a 10x10cm dressing was placed over the heated material. The temperature immediately began to drop, and continued to cool the mass more effectively than the control.<sup>ii</sup>

Furthermore in-vitro trials conducted of Melaleuca Oil showed that the inflammatory activity of monocytes was regulated by the water-soluble components of Melaleuca Oil. Melaleuca Oil suppresses monocyte production of inflammatory mediators and superoxide and thereby may prevent tissue damage.<sup>iii</sup> Cooling can also help preserve mast cells and help decrease inflammation. These two actions combined may help reduce tissue damage.

The cooling properties of the Burnaid Gel aid in stopping burn progression and increasing wound healing.



<sup>i</sup> Jandera V., Hudson D.A., de Wet P.M., Innes P.M., Rode H., Cooling the burn wound: evaluation of different modalities, Burns 26 (2000) 265-270

<sup>ii</sup> Guy I. Report on the cooling properties of Burnaid Dressings. Macquarie University. January 2003.

<sup>iii</sup> Finlay-Jones J., Hart P., Riley T., Carson C., Anti-inflammatory activity of Tea Tree Oil, RIRDC Publication No 01/10, February 2001

## PAIN RELIEF

In-vitro studies conducted at the University of Sydney using Melaleuca Oil on isolated nerve preparations, indicated a classical local anaesthetic action of a reversible nature, but with some apparent difference in mode of action to a common local anaesthetic substance such as procaine.<sup>iii</sup> This action was observed at dilutions as low as 1/2500.

The Melaleuca Oil in Burnaid combined with a 3mm layer of Burnaid Gel held in-situ by the dressing, provides rapid cooling pain relief to the patient.

## INFECTION CONTROL

The antimicrobial activity of one of the ingredients in Burnaid - tea tree oil, is well-documented in scientific literature.

Testing of Burnaid Burn Gel Tubes (4% Melaleuca Oil) in accordance with British Pharmacopoeia Preservative Test indicated Burnaid passed the test.<sup>iii</sup>

Culture	Control Count	0 hr	6 hr	24 hr	48 hr
S. aureus	1.9x10 <sup>7</sup>	8.4 x 10 <sup>5</sup>	<10	<10	<10
Ps. aeruginosa	4.7x10 <sup>6</sup>	3.6 x 10 <sup>5</sup>	<10	<10	<10
C. albicans	5.1x10 <sup>6</sup>	4.0x10 <sup>5</sup>	<100	<100	<100
A. niger	2.9x10 <sup>6</sup>	4.7x10 <sup>5</sup>	3.8x10 <sup>5</sup>	2.6 x 10 <sup>5</sup>	<100

Testing of Burnaid Gel (4% Tea Tree Oil) by the Department of Microbiology, Repatriation General Hospital, Concord, Sydney, for activity against a number of organisms expressed as zones of inhibition, indicated activity against all organisms.<sup>iii</sup>

ORGANISM	ZONE OF INHIBITION (mm)
C. albicans	5
C. tropicalis	11
Staph. aureus 3	40
Staph. aureus 4	47
E. coli 5	30
E. coli 6	24

The results indicate that the active ingredient in Burnaid Gel (Melaleuca Oil – 1.0% w/w Dressings & Sachets, 4% w/w Tubes), exhibits biocidal activity, aiding the prevention of secondary infection. However it must be noted that biocidal activity in 1% gel (dressings) is mild.

## **SAFETY**

### ***Toxicity, Skin Irritation and Sensitisation***

In-vivo studies conducted on Burnaid indicate a Draize irritation index of 0 for acute dermal irritation, indicating a non-irritant. Skin sensitization studies indicated slight intradermal irritation reactions, although no sensitization properties are shown. Oral toxicity studies indicate the LD50 to be greater than 10g/Kg - indicating a very low potential toxicity. Burnaid Gel 4% was evaluated as a very mild eye irritant using the Draize procedure.<sup>iii</sup>

21-day cumulative irritancy testing of a 10% Melaleuca Oil formulation conducted on humans indicated that in general low percentage formulations used topically such as Burnaid would appear to pose little risk of skin irritation when applied under normal conditions.<sup>iii</sup>

### **Wound Healing**

In-vivo studies examining the effect of tea tree oil on experimental wounds showed that when compared to untreated control wounds, there was no significant difference in healing times indicating the active ingredient in Burnaid - Melaleuca Oil, did not delay wound healing.<sup>iii</sup>

### **Sterility**

Burnaid Dressings are gamma irradiated at a minimum dosage of 25Kgys. Independent review of the radiation sterilisation practices and laboratory testing procedures used on Burnaid gave a Sterility Assurance Level (SAL) of greater than  $10^{-6}$  – ensuring compliance as a sterile medical device under FDA and European Union Sterile Devices Codes.<sup>iii</sup>

## BURNAID PROTOCOLS

*The following BURNAID protocols apply to all types of Burns from Superficial, Partial and Full thickness Burns. Medical attention should be sought for any burns:*

- *deeper than superficial*
- *larger than a 20 cent piece*
- *caused by electricity*
- *to the eyes*
- *involving airway, hands, face or genitals*
- *associated with inhaled smoke, gas or fumes*
- *where severity is uncertain.*

BURNAID should be used within the context of emergency medical or first aid procedures and is of particular benefit where there is no ready supply of clean cool water, or where a burn patient requires transport to a medical centre.)

Remove the casualty from the cause of the heat and cool the injured area. Ensure the environment is safe to continue first aid – (do not become another burns casualty yourself). Reassure the casualty and assess the injury.

**If available apply running clean cool water** – BURNAID should be used immediately only if there is no clean water supply or if immediate transport is required.

**FOR ELECTRICAL BURNS ENSURE POWER IS DISCONNECTED PRIOR TO APPLYING THE DRESSING**

Apply BURNAID gel or dressings to cool burns as soon as possible in order to prevent further damage to underlying tissues, aid the healing process and provide rapid relief from pain.

Gently remove any rings, watches, belts, shoes or other constricting clothing from injured area before swelling occurs. Do not remove anything stuck to the wound.

Cover burns by selecting the most appropriate size of dressing. For example, an assorted Blanket Replacement Kit can contain assorted dressings to cover a complete body and should be used for all large area burns.

Bandage lightly with a conforming bandage to hold in place. An open weave bandage, lightly applied, should be used to allow heat to dissipate from the affected area.

BURNAID can be left on for up to 2 hours or until the dressing becomes dry. If conditions are very hot or dry, dressing may dry out and need replacing earlier. *Prolonged and large surface area exposure to BURNAID may contribute to hypothermia. To help prevent hypothermia bandage with open weave bandage and or cover body surface with space or heat reflective blankets. Normal blankets can also be applied. Cling wrap can be placed over Burnaid dressings after initial cooling period to help prevent excessive heat loss for long distance transport of patient to medical facility.*

BURNAID is removed easily for examining burns or to apply another dressing.

BURNAID can be transported in sterile single use sachets, dressing packs or blanket replacement kit.

BURNAID gel and dressings should not be stored at extreme temperatures. Store in a cool place wherever possible.

BURNAID gel is non-toxic and of little or no irritancy. If irritation occurs BURNAID should be removed immediately. If burns are severe or cover a large area apply BURNAID and seek immediate medical treatment.

## **PROTOCOL FOR THE USE OF BURNAID WITH ACID BURNS**

Remove clothing completely and as quickly as possible.

If water available complete and continuous irrigation should be done for a minimum of 30 min to 1 hour. (Neutralization of chemical burns will waste time and needs to be performed within the first 3 minutes of receiving the chemical burn)

Apply BURNAID gel or dressing to the burn. If using gel, apply liberally so that all air is excluded from the burn area. If using a dressing, choose the most appropriate size to completely cover the burn.

Repeat the application of BURNAID gel or dressing after one (1) hour.

Bandage lightly with a conforming bandage to hold in place. An open weave bandage, lightly applied, should be used to allow heat to dissipate from the affected area.

If water not available, remove all clothing completely and any offending agent remaining on the skin with a dry cloth. Apply BURNAID immediately and transport to a medical facility. (Burnaid should only be applied immediately if there is no water available).

It is recommended to follow MSDS information regards treatment of chemical burns.

***PROTOCOL FOR THE USE OF BURNAID WITH ALKALINE BURNS***

Remove all clothing completely (clothing can trap offending chemical).

If water available irrigate continuously for 30 minutes to 1 hour.

Apply BURNAID gel or dressing to the burn. Apply gel liberally so that all air is excluded from the burn area.

Repeat the application of BURNAID gel or dressing after one (1) hour.

Bandage lightly with a conforming bandage to hold in place. An open weave bandage, lightly applied, should be used to allow heat to dissipate from the affected area.

If no water available or if patient needs to be transported immediately to a medical facility - Remove clothing completely, remove any remaining agent with a dry cloth and apply BURNAID

It is recommended to follow MSDS information regards treatment of all chemical burns

**Burnaid Burn Dressings Vs. Current Standard Treatment**

<b>Traditional Therapy</b>	<b>Cost</b>	<b>Burnaid Burn Dressing</b>	<b>Cost</b>
1000cc Normal Saline for cooling/irrigation	\$0.99	1 Sterile 4x4" Burnaid Dressing	\$3.50
Sterile 4x4" gauze bulk pack	\$4.45	Nursing time – 3 minutes to apply dressing	\$0.90
Sterile Towels 5 pack	\$2.00		
Pain Control (if required)			
Demerol 1cc	\$0.90		
Syringe	\$0.25		
Nursing Time			
– 15 minutes for repeated cooling/irrigation	\$4.50		
– 15 minutes minimum mandated observation time required when Demerol is administered	\$4.50		
<b>TOTAL</b>	<b>\$18.40</b>	<b>TOTAL</b>	<b>\$4.40</b>

**Treatment Comparison**

<b>Traditional Treatment</b>	<b>Burnaid Burn Dressing</b>
Continuous Saline irrigation by nurse is required to maintain cooling effect.	1. Cools and soothes.
Saline solution does not stay on the burn site.	2. Immediate and ongoing pain relief.
Minimal ongoing pain relief.	3. Stops burn progression.
Removal of 4x4" gauze may cause discomfort.	4. Continues to draw heat out of the burn for up to 2 hours.
Often in need of pain killers for children, and it can be undesirable that narcotics are used.	5. Provides a physical sterile barrier against contamination.
	6. Water soluble gel that easily rinses off with water causing no discomfort to the patient.
	7. Gel exhibits anti-microbial activity, mild local anaesthetic and anti-inflammatory action.
	8. May reduce the need for narcotics, particularly in the case of children due to the quick and ongoing pain relief.
	9. Reduces 'hands-on' time of both nurses and physicians – freeing them to attend to other patients.

## Literature Review: The role of hydrogel (Burnaid) in the first aid treatment of burns.

**Mark Rosenthal**, CNS AICU Prince of Wales Hospital Randwick NSW, Bachelor of Nursing QUT, Grad Cert Critical Care Nursing. RYE Pharmaceuticals Product Support Management. March 2007.

The aims of first aid should be to stop the burning process, cool the burn, provide pain relief, and cover the burn (1). It is well known that cooling a burn lessens pain and decreases burn depth, hence speeding healing times and decreasing the risk of scarring (3). If immediate first aid cooling of the burn does not occur, intense inflammation causes progression of the depth of the burn over 48 hours (2). Even though it has been established that early first aid is vital and is relatively simple to administer, there is still a large percentage (47%) of non compliance in adequate first aid received by patients who present to hospital (4). More needs to be done to prevent burn injuries given that in Australia annually more than 200,000 people are accidentally burned, 20,000 are taken to hospital and 115 die every year from burns (5).

Australian and New Zealand Burns Association (ANZBA) guidelines on first aid cooling for burns are; cool the burn surface with cool running water for up to 20 minutes up to 3 hours after the burn (6). Ordinary tap water with a temperature 8 to 20 degree C is suitable (7). Burnaid is a hydrogel containing >90% water and a small percentage of Melaleuca oil impregnated into a proprietary gel. It is designed for use as a first response treatment to cutaneous burn injury. (8) Clinical trials have clearly demonstrated the beneficial effects of cooling the partial thickness burned wound for at least one (1) hour by means of either repeated cold tap water compresses at  $\pm 15$  C or with Melaleuca Hydrogel (9).

In many cases continuous flushing with tap water can be impractical or logistically impossible to continue whilst transporting a patient. Cooling or first aid interventions in many cases are stopped for patients to be transferred for medical treatment (3). Hydrogel dressings are an ideal transport medium that continues the cooling process whilst mobilizing the patient. Cooling with tap water for prolonged periods, especially in minor burns can also be impractical. In the event that general activities must continue, and if the burn is a minor injury, a water gel product may be applied (7). In a country that values its water resources there are many areas that have insufficient quantities of fresh cool water required to provide first aid for burns. In a recent interview in regards to rural management of burns, Dr Peter Maitz, Director of Burns Unit at Concord Hospital identified this as a problem. "As cold running water can be a hard thing to find in the bush, I advise people to purchase a hydrogel dressing which you can get from a pharmacy and keep handy in the first aid kit. These moist specially packaged bandages work using evaporation to quell the burning process". (5) Guide lines for first aid treatment have been reviewed in aspect of this issue of water not being available. Dr John Greenwood, Director Royal Adelaide Hospital (RAH) Burns Unit, presented guidelines initiated by the RAH at the 2005 ANZBA

scientific meeting. If water not available smear hydrogel (Burnaid) or hydrogel sheets over the surface of the burn (15).

Cooling the burned area is an emergency measure that both clinically and experimentally has always shown benefits (8). Cryotherapy improves the tissue response to thermal injury. This is achieved by a reduction in post burn hyperthermia, reduced inflammatory and microvascular changes, and less tissue necrosis and fibrosis. In addition there is less release of histamine, prostaglandins, thromboxanes, as well as reduced aerobic metabolism, less lactate production and metabolic acidosis. (9)

The inflammatory reaction involves a network of mediators which signal a variety of cell types, including lymphocytes, macrophages and neutrophils, to release products important in the killing of micro-organisms but which also cause tissue damage and pathology (11). This inflammation process is not only reduced through immediate cooling but may also be benefited from the small amount of *Melaleuca Alternifolia* (Tea Tree) Oil present in Burnaid. Vitro studies have shown Tea Tree Oil enables neutrophils to remain fully active in an acute inflammatory response, whilst suppressing monocytes inflammatory mediators thereby preventing oxidative tissue damage in a prolonged inflammatory state (12).

First aid treatments of burns also involve covering the burn and provide analgesia. Hydrogel dressings are an ideal dressing to cover the burn but also provide instant and ongoing pain relief in a number of ways. Exposed nerve endings will cause pain but covering the exposed burn and cooling will provide pain relief (1). The efficiency of Burnaid providing pain relief could be attributed to a constant contact layer of hydrogel on the surface of the burn, reducing direct contact of atmosphere air on the exposed nerve endings, allowing for heat transfer through the open cell foam away from the wound. In studies comparing different cooling modalities for burn treatment, it was observed a more immediate and persistent effect on reducing pain using hydrogels was seen (10). The effectiveness of Burnaid Hydrogel on pain may also be attributed to documented affects of Tea Tree Oil having local anesthetic properties. In-vitro studies conducted at the University of Sydney using *Melaleuca* Oil on isolated nerve preparations indicated a classical local anesthetic action of a reversible nature, but with some apparent difference in mode to a common local anesthetic substance such as procaine (13).

Covering the burn not only creates pain relief it should also provide a clean dressing to protect the wound from further contamination. Cutaneous lesions due to burns constitute a major problem, they are slow to heal, become infected, cause persistent pain, and lead to unaesthetic scarring and invalidity (10). Burnaid is a sterile dressing that contains a small amount of Tea Tree Oil as a preservative.

Melaleuca Hydrogel is readily available as a compact, easily transportable light dressing, available in different sizes. A single application of Melaleuca Hydrogel is as effective as repeated cold water compresses and it is unlikely that Melaleuca Hydrogel application could lead to significant hypothermia when applied on a large burn. (9) Cooling gels are often used by paramedics and are useful in cooling the burn and relieving pain in the initial stages (1). Recent product evaluation of Burnaid within large metropolitan hospital emergency departments has shown positive results. Advantages of Burnaid hydrogel in the emergency situation of note were; good effective analgesia with instant pain relief, patient not lying in wet bed and does not get cold, Burnaid is easy and quick to use as a treatment for burns injuries (14). Burnaid rated highly as an effective first aid measure in the treatment of superficial/partial thickness burns. Burnaid's analgesic and cooling qualities are advantageous during initial burn management phases. Staff evaluating the product (Burnaid) identifies ease of application as a positive characteristic. (8)

## **BURNAID PRODUCTS**

Burnaid is supplied in gel and dressing forms to suit all types and sizes of burn injuries. Burnaid gel and gel impregnated dressings are manufactured under strict regulated conditions. Burnaid Dressings are gamma irradiated at a minimum dosage of 25Kgys. Independent review of the radiation sterilization practices and laboratory testing procedures used on Burnaid gave a Sterility Assurance Level (SAL) of greater than  $10^{-6}$  – ensuring compliance as a sterile medical device under FDA and European Union Sterile Devices Codes. Burnaid Dressings and sachets are approved for sale under US FDA, European Union CE, Australian TGA, NZ – MOH, and throughout selected countries in Asia and the Middle East.

### **BURNAID GEL – Single Use Sachet**                      **size**                      **Product Code**

- Relieves the pain of small spot burns
- Cools
- Water based gel can be rinsed off
- Sterile, single use no cross-contamination
- Antimicrobial – helps prevent infection



### **BURNAID GEL – Tube**                                      **size**                                      **Product Code**

- Water based gel
- Cools by drawing heat out of the burn, As opposed to creams
- Water soluble gel that can be rinsed off
- Antimicrobial and Non Toxic

25g Tube                      BT25  
 50g Tube                      BT50



**BURNAID Gel Burn Dressings** **size** **Product Code**

- |   |   |   |
|---|---|---|
| <ul style="list-style-type: none"> <li>• Relieves Pain</li> <li>• Cools by drawing heat out of burn</li> <li>• Sterile Barrier against contamination</li> <li>• Antimicrobial – helps prevent infection</li> <li>• Ideal for transport or where water not available (40cm x 30cm)</li> <li>• Can be used for all burns superficial to full thickness burns</li> </ul> | <p>10cm x 10cm</p> <p>20cm x 20cm</p> <p>55cm x 40cm</p> <p>Face mask</p> | <p>BD10</p> <p>BD20</p> <p>BD55</p> <p>BDF1</p> |
|---|---|---|



**BURNAID Burn Kit** **Product Code:** **BKS**

- |  | <b><u>Contents</u></b>                  | <b><u>Quantity</u></b> |
|--|---|------------------------|
| <ul style="list-style-type: none"> <li>• Ideal general purpose burns kit</li> <li>• Easy re-seal carry pack</li> </ul> | <p>BS35 Sachet</p> <p>BD10 Dressing</p> | <p>5</p> <p>1</p>      |



**BURNAID Blanket Replacement Kit**

**Product Code BBRK-0**

	Contents	Quantity
<ul style="list-style-type: none"> <li>• Ideal as a multi-purpose burn kit to treat any size burn</li> <li>• Suitable for areas where large burns are a risk</li> <li>• Portable and easy to store in cupboards or vehicle lockers</li> <li>• Customize contents to meet your specific requirements</li> <li>• Large enough to carry all dressings required for minor up to full thickness burns covering &gt;90% BSA.</li> </ul>	Burnaid Bag with Velcro strap	1



## **ORGANIZATIONS USING BURNAID**

Burnaid should be used in all areas that there is a possible or foreseeable risk of a burn injury occurring.

The use of Burnaid will provide immediate first aid treatment and will reduce the risk of serious injury and liability. With early treatment of burn injury there is lowered incidence of long term complications with debilitating injuries. Burnaid will reduce time away from work with burn injury and will improve productivity and employee wellbeing.

Burnaid is used in all types of Industries:

- Hospital Emergency Departments
- Ambulance, Paramedic and Emergency Service Organizations
- Medical and Burns retrieval services
- Medical practitioners and 24 hour emergency clinics
- Defense services – Army, Navy and Air force
- Rural and country fire services
- Emergency volunteer organizations
- Petroleum and offshore mining industry
- All mines and heavy industry
- Utility organizations – electrical, road and council workers
- Construction and building industry
- Schools, colleges and Universities
- Chemical and scientific laboratories
- Restaurants, food processing and food services industry
- Resorts, tour operators
- Podiatry and physiotherapy clinics
- Veterinary and animal hospitals

## **Frequently Asked Questions?**

### *1. Can Burnaid be used on deep or full thickness burns?*

Yes it can – Burnaid can be used on all degrees of burns, from sunburn superficial, partial and full thickness burns, even where there are open skin wounds. Extensive testing and trials of the Burnaid Hydrogel have shown it will **not** cause any tissue damage. Burnaid is completely sterile that will help with secondary infection and protect the wound.

### *2. Because Burnaid contains a small amount of Tea Tree Oil are there concerns regards allergies?*

Burnaid dressings and gel do contain a small percentage of Melaleuca Alternifolia or Tea Tree Oil (TTO). Extensive studies have shown that pure TTO 50% and 100% solutions have a 2/100 reaction rate. This is equivalent to any type of reaction rate for hand soaps sanitizers etc. Since Burnaid use a 1% and 4% TTO solution diluted into its hydrogel possible reactions are even smaller.

3. *Will Burnaid cause Hypothermia?*

Any type of cooling modality has the potential to cause hypothermia. Burnaid has a less chance of causing hypothermia than running water over full body surface area as it is target specific to the burn area. Placing the Burnaid dressing directly over the affect area cools the burn and avoids rapid cooling on other body surface area as does showering or hosing the patient. Care should be taken to avoid hypothermia especially in those patients who are most at risk; infants, elderly and those with large surface area burns. It is recommend for such patients that cooling of the burn are persist with Burnaid and that cling film, light open weave bandage, space blankets or normal blankets be placed onto the patient and use the heat transferred out of the burn wound to keep core body temperature normo-thermic.

4. *I have been told I cannot use any creams or lotions on Burns and only water?*

That is correct. Other creams or lotions are petroleum or waxed based and can trap heat on the wound. They can also cover the wound in a film like substance and make wound assessment for medical practitioners difficult. Burnaid dressings and gels are a water based gel >90% water in a gel that breaks down with heat from the burn injury. This releases water onto the wound and cools through evaporation and convection airflow. It is completely water soluble and any extra gel breaks down and washed away with flushing of water or saline. Burnaid **is water** in a gel.

5. *How long can you keep Burnaid?*

Burnaid is a sterile product that has a shelf life of 5 years from date of manufacture.

**TRAINING AND SUPPORT MATERIAL**

- Burnaid training CD
- Burnaid First Aid Guidelines Poster A2 wall poster
- Burnaid protocol and guidelines for use
- Burnaid sales brochure A4
- Supplementary articles and research document.
  - Clinical trials
  - Tea Tree Oil research articles
  - Current user protocols

If you require further information or assistance with Burnaid please do not hesitate to contact RYE PHARMACEUTICALS PTY LTD.

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