



Number 49 | January 2014

Pre-Mix Aerial Driptorch Gel Development & Availability.

Overview

DEPI has been using the aerial driptorch (ADT) for its aerial ignition program since the early 1990's.

Unleaded petrol is mixed with a "2 pack" commercial gelling agent (Flash 21) by the ADT support crew in a 200lt mixing barrel. Chemical handling and fire protection procedures are adhered to when mixing these products and also when transferring the gel into the ADT.

The mixing equipment requires cleaning at the end of a day's operation and again strict procedures are adhered to by the ADT support crew.

The Flash 21 thickening agent is an easy product to mix and can be stored in the mixed state for periods of time without losing viscosity.

A trial was initiated in 2013 to produce a pre-mixed gel product, to ascertain its reliability and quality in storage and to reduce the risk to personnel from a safer chemical and flammable liquid handling perspective.

The aim was to provide a gel product which would:

- have a stable life with no loss of viscosity;
- provide same level of ignition intensity;
- have no adverse flight/drop characteristics;
- remove the requirement to conduct on site mixing, therefore reduce risk to agency personnel;
- significantly reduce the requirement to clean up mixing equipment at end of day – empty pre-mix gel drums would be discarded or returned to the supplier for refill;
- reduce wastage when only topping or half loads are required or where extra quantities have been mixed and not required;
- enable loading of gel into the ADT directly from the premix drum with no external transferring of product required – a dry break system has been developed;
- enable more gel to be carried in the ADT barrel in situations where the helicopter performance permits this to occur.

A supply of unleaded petrol is still be required at the mixing/loading site for cleanup of the ADT.

Pre-Mix Gel Product

The trial product was developed by Oilchem and is called Aerial Driptorch Gel. A similar product with a lower viscosity is being developed for the vehicle mounted flame thrower.

The first part of the trial established the storage qualities of the product and confirmed no loss of flammability and viscosity over time. Flight tests were then conducted to confirm flight characteristics and ensure stable ignition.

Operational tests were conducted in Mildura district with ADT ground support and the ADT operator all making favourable comments as to the products performance.

The final product is a Type 3 hazardous flammable liquid and the PPE required as per the MSDS is:

- protective overalls;
- protective boots;
- safety goggles;
- impervious gloves.

No additional equipment is required as the existing gel/fuel transfer pumps are used to transfer the pre-mix product. The ADT operations manual will be amended to reflect the inclusion of this product into operations.

The MSDS for this product is available on Fireweb.

Availability

The pre-mix gel product is available in 200lt drums through the North Altona Equipment Centre. Price will be approx \$700.00 per 200lt drum.

The Altona Equipment Cache and the manufacturer will be storing limited stocks of this product.

DEPI Regions/Districts need to start planning for their autumn planned burn/ADT operations and advising the Equipment Centre of their pre-mix gel requirements.

Stocks of the Flash 21 gelling agent will still be held by North Altona and ADT gel product will still be able to be mixed as previously. ADT support crews will still be assessed on their ability to mix the product until Regions fully adopt the pre-mix gel mode of operation.

Contact Officer

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