

SAFETY BULLETIN

DATE: OCTOBER 2021

Polyurethane Resin selection

Issue

Following a serious methane gas ignition incident at the Grosvenor mine, a Queensland Coal Mining Board of Inquiry was set up to:

- determine the nature and cause of the serious accident at longwall 104 on 6 May 2020
- inquire into the probable cause of 40 methane exceedances which occurred between 1 July 2019 and 5 May 2020
- assess the adequacy of operational practices and management systems at the mines involved and at corporate level in relation to incidents
- make recommendations for mine operators, relevant obligation holders and other relevant parties for improving safety practices to mitigate against the risk of similar incidents in the future.

Circumstances

The Board of Inquiry released its report in two parts. Part 2 had two relevant recommendations regarding the use of polyurethane resin (PUR) for strata injection. Recommendation 13 and 14 were considered relevant and are detailed below.

Recommendation 13

Coal mines conduct a thorough risk assessment for the use of polymeric chemicals, especially polyurethane resins, which includes a consideration of the risk of spontaneous combustion of coal being initiated by the product, before introduction and application at site.

Recommendation 14

The industry undertake research into polyurethane resins to determine the extent to which their use poses a risk of initiating spontaneous combustion of coal.

Investigation

The NSW Resources Regulator has carried out a review of the Board of Inquiry's recommendations and determined that several are applicable to NSW coal mines. The above recommendations are directed at mine operators and the industry in general. We support those recommendations.

Recommendations

Mine operators should:

- complete a thorough risk assessment for the use of polymeric chemicals, which includes a consideration of the risk of spontaneous combustion of coal being initiated by the product
- consider the exothermic temperatures on curing of PUR as well as the thermal runaway temperature of the coal when selecting PUR products.

Polymeric licence holders should:

- note that licence conditions stipulate that polyurethanes are not to be used for filling large open cavity areas
- consider in their risk assessment what might be an indicator of large open cavities (e.g. lower than expected pump pressures and/or many holes reaching maximum allowed injection quantity).

NOTE: Please ensure all relevant people in your organisation receive a copy of this safety bulletin and are informed of its content and recommendations. This safety bulletin should be processed in a systematic manner through the mine's information and communication process. It should also be placed on the mine's common area, such as your notice board where appropriate.

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