

## Azides Manipulation: Danger is not our Middle Name

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Azides play a pivotal role in organic synthesis, as they allow to introduce a variety of key functional groups in synthetic scaffolds of interest. These include amines, triazoles, tetrazoles, isocyanates, etc.<sup>1,2</sup> Regardless of azides role in the synthesis -whether only azide-based reagents are used or the azide moiety is also present in the resulting product- this type of chemistry generally involves significant safety risks.<sup>3</sup> Main concerns are linked to azides general toxicity and explosivity. In addition to this, each azide bears the potential to form hydrazoic acid (HN<sub>3</sub>) upon decomposition, which is even more dangerous than its precursors.<sup>4</sup>

Despite these caveats, azides are often manipulated, especially at small and medium scale, with insufficient precautions and knowledge about the involved risks.<sup>5,6</sup> At Dipharma, we have extensive experience in the safety evaluation for scale-up of chemical processes involving azides, with multi-ton productions per year of various intermediates and APIs exploiting this type of chemistry. In this presentation, we will provide a general overview about the dos and don'ts in azides manipulation based on this expertise. These will cover the main incompatibilities, some rule-of-thumbs to evaluate the dangers that may be encountered and some strategies to tame the highlighted dangers. These will be supported by tailored examples from our product portfolio, giving a taste of the chemical space that can be accessed at scale when making good use of azides chemistry.

### References:

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