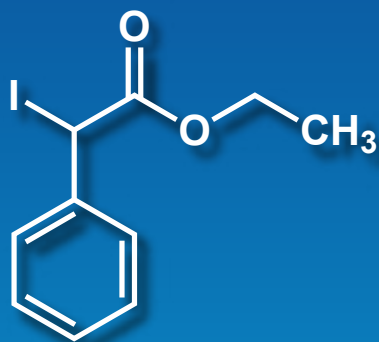
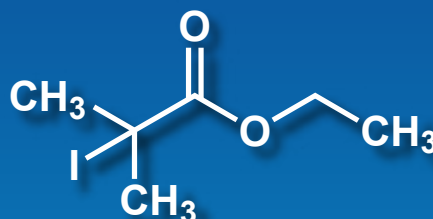


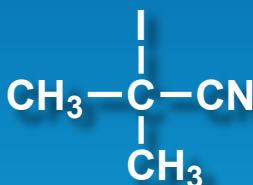
# Alkyl Iodide Initiators for Organocatalyzed Living Radical Polymerization



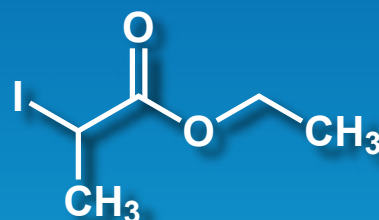
Ethyl 2-iodo-2-phenylacetate  
5g / 25g  
[E1200]



Ethyl 2-iodo-2-methylpropionate  
5g / 25g  
[E1199]



2-iodo-2-methylpropionitrile  
1g / 5g  
[I0954]



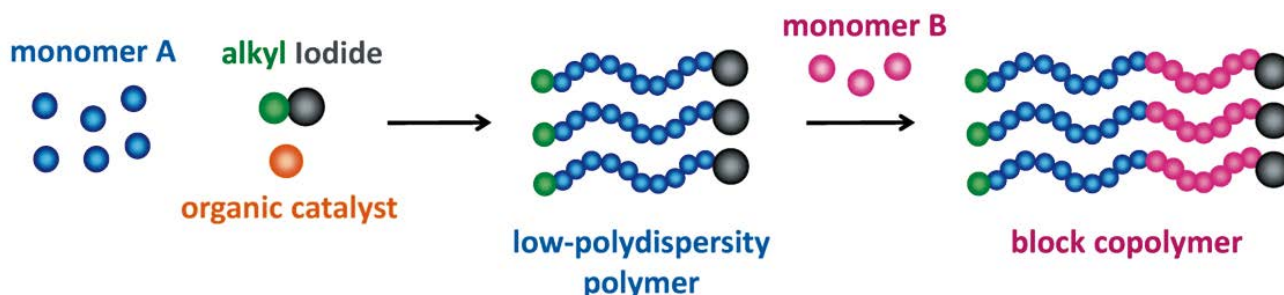
Ethyl 2-iodopropionate  
5g / 25g  
[E1198]

## Advantages

- Allows controlled/living radical polymerization in the presence of a catalyst.
- Obtained polymers have low polydispersity.
- Realizes metal-free polymerization.

## General Scheme of Organocatalyzed Living Radical Polymerization<sup>1-5)</sup>

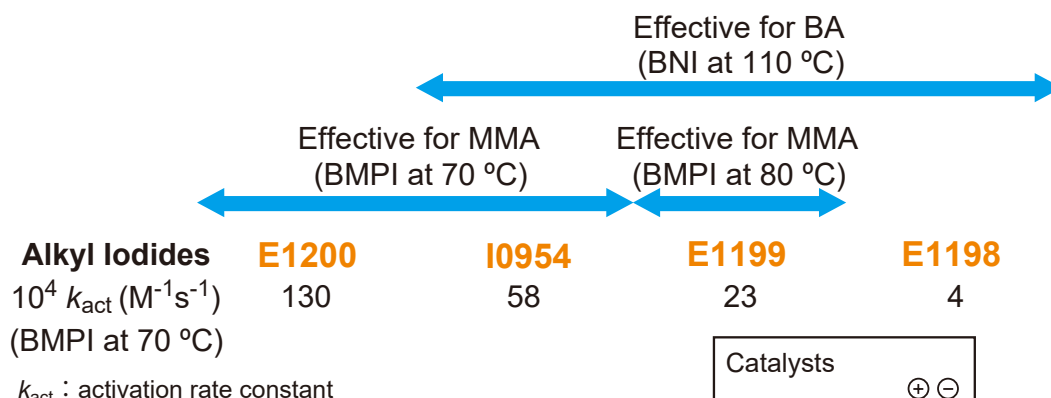
### Organocatalyzed Living Radical Polymerization



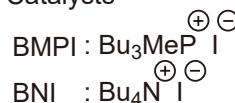
Goto *et al.* have reported that alkyl iodides are efficient initiators for organocatalyzed living radical polymerization which is a new family of living radical polymerization. Organic amines and organic salts are used as catalysts.<sup>1-5)</sup>

# Alkyl Iodide Initiators for Organocatalyzed Living Radical Polymerization

## Ranges of Effective Alkyl Iodides in the Polymerizations of Methyl Methacrylate (MMA) and Butyl Acrylate (BA)<sup>1-3)</sup>



Catalysts



These alkyl iodides are effective initiators in methyl methacrylate (MMA) and butyl acrylate (BA) polymerizations using tributylmethylphosphonium iodide (BMPI) or tetrabutylammonium iodide (BNI) as a catalyst. Low-polydispersity polymers are obtainable.<sup>1-3)</sup>

## References

- 1) L. Lei, A. Goto, M. Miyamoto, *et al.*, *Macromolecules* **2014**, *47*, 6610. <https://doi.org/10.1021/ma501569j>
- 2) A. Goto, T. Fukuda, Y. Tsujii, *US* 7399814, **2008**.
- 3) A. Goto, PCT Int. Appl. WO 2015122404, **2015**.
- 4) A. Goto, A. Ohtsuki, H. Ohfuji, M. Tanishima, H. Kaji, *J. Am. Chem. Soc.* **2013**, *135*, 11131. <https://doi.org/10.1021/ja4036016>
- 5) A. Ohtsuki, L. Lei, M. Tanishima, A. Goto, H. Kaji, *J. Am. Chem. Soc.* **2015**, *137*, 5610. <https://doi.org/10.1021/jacs.5b02617>

These products are commercialized under the instruction of Prof. Atsushi Goto.

## Related Products

**Methyl Methacrylate (= MMA)**

25mL / 500mL **[M0087]**

**Butyl Acrylate (= BA)**

25mL / 500mL **[A0142]**

**Tributylmethylphosphonium Iodide (= BMPI)**

5g / 25g **[M1455]**

**Tetrabutylammonium Iodide (= BNI)**

25g / 100g / 500g **[T0057]**

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TCI radical polymerization



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