

PROCESSING BROMINE CONTAINING WASTE STREAMS



ICL-IP Terneuzen BV is a chemical production company specialising in flame retardants, fine chemicals, biocides and inorganic chemicals. Production is mainly carried out by flexible batch processes. We also offer, with our specialist knowledge and equipment, the possibility of contract manufacturing of chemicals and blends.

New is our bromine recovery installation which we also employ for the work-up of bromine containing waste streams.

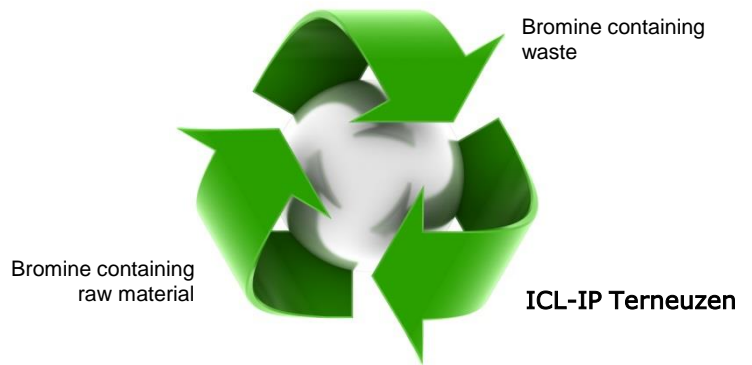


General

In our continuous pursuit of sustainability ICL-IP Terneuzen B.V. aims to engage and participate with our customers in finding solutions for their waste problems. We can and want to play an active part in this by taking back brominated waste streams created during the processing of our products, and to recover brominated products or elementary bromine from these waste streams.

Which waste streams?

We can treat both organic and inorganic waste streams. For inorganic streams after sample analysis the best work-up method can be determined, to identify whether bromine or a (re)usable product can be recovered. The organic waste streams are oxidised and subsequently bromine is recovered.

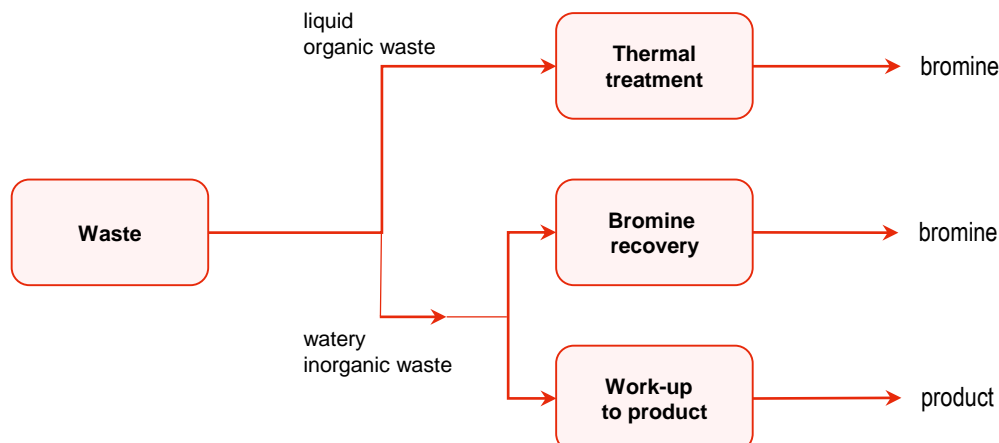


Work method

For each waste stream we will determine the ultimate work-up method. First we check if product can be recovered directly. If this is not the case then the possibility of recovering elementary bromine is examined. In particular inorganic material is suitable for conversion to product. If this is not possible then bromide salt can, in many cases, be converted to elementary bromine.

For organic material re-use as raw material is also not impossible, but in general more difficult. Organic material can be thermally treated and bromine recovered from the flue gasses.

The inorganic waste or product streams are analysed in our laboratory. After removal of the organic compounds, the possibilities of the work-up of this stream to product, and/or its suitability for bromine recovery are tested. The work-up method is dependant on the composition of the stream supplied.



Technology applied

To carry out this process successfully we have the following equipment at our disposal:

- Installations to carry out different batch processes;
- installation for thermal treatment of bromine containing waste streams , and an
- installation for bromine recovery.

While processing the rest streams at ICL-IP Terneuzen, various environment protecting equipment will be in use, such as a catalytic afterburner to minimise emissions of fugitive organic material, and a physical-chemical and biological water purifying installation for the removal of pollutants from waste water.

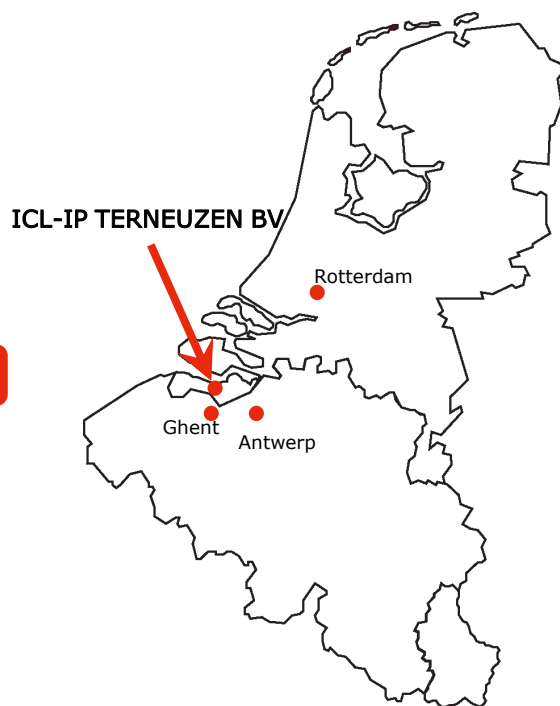


Logistics

ICL-IP Terneuzen is located near the major industrial areas of Rotterdam, Antwerp and Ghent.

We have both outdoor and indoor storage facilities available, loading and unloading docks for lorries and railway carriages, and a 20 ft forklift for containers.

Also a jetty for loading and unloading of ships is at your disposal. As well as facilities for both the filling and emptying of drums and IBC's.



Permits & Management Systems

ICL-IP Terneuzen is a chemical company and holds permits in accordance with SEVESO- and IPPC-guidelines. The processing of waste is an explicit part of our permit. We can also assist in obtaining EVOA decrees for border crossing waste transports. This also applies to procedures for waste streams originating from outside Europe.

ICL-IP Terneuzen BV is certified in accordance with the quality standards mentioned below:

- ISO 9001
- Environmental standard ISO 14001
- Safety standard OHSAS 18001

All our engineering activities are preceded by an in-depth safety study carried out by our HAZOP-team.



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