

## Bt SUMMARY

*Bacillus thuringiensis* (Bt) is a microorganism which produces a protein toxin which damages the midgut lining of certain insect species, with subsequent paralysis of the insect.

### Acute toxicity

Bt is slightly acutely toxic to rats, fish, mussels, and shrimp.

### Chronic toxicity

Carcinogenic and mutagenic studies have been negative. No data were available on developmental and reproductive studies. EPA did not require these studies in the reregistration document.

### Environmental fate

Mobility data were not required by EPA since (a) there was no evidence of health risk via oral route of exposure and (b) Bt is a normal component of soil. One reference stated Bt does not move in soil. The spores may persist in soil and water for several months, but appear to lose their insecticidal activity in a matter of days.

### Nontarget, other

In field test in Nova Scotia, no effects on beneficial predacious insects were reported. Bt is essentially nontoxic to bees and earthworms. Based on previous use, formulations are not considered phytotoxic. The toxin is released by the microorganism only under highly alkaline conditions; thus its potential for release into the ambient environment is unlikely.

BT is considered a skin and eye irritant.

### Conclusions

No acute or chronic toxicity concerns were found in the review. Bt has the potential to persist, but apparently not in an active form. Although there was little available information, one reference stated Bt is not mobile in soils. Nontarget effects have not been seen in lab or field studies. Bt passes the review criteria.