



The world's worst smell

IAN SIMMONS sniffs out the world's most putrid pongs and offensive odours – but which is the worst of all?

In 2013 a waste disposal company carried out a survey to discover the British public's top ten worst smells, the results included baby poo, sewers on a hot day, bad breath, wet dog, rotten food and the “juice” at the bottom of your bin. Elsewhere decaying turtles, vulture vomit and weasel anal gland contents have been put forward as strong candidates and FT has regularly featured incidents involving the bracing odour of the durian fruit, but none of these come even close to the worst smell ever discovered.

Frankster Allen Wittman attempted to make the worst smell ever with a home chemistry set. After he and a friend were laid off work, they took revenge by leaving a few drops of the substance in the company break room. On learning that the organisation had subsequently gutted the room, replacing appliances, pipes and carpet in a vain attempt to expunge the stink, described as “butt crack, kind of a sewer smell with a hint of dead animal”, they saw a commercial opportunity and marketed the substance, now called Liquid ASS, as a joke product. Their publicity states:

“We package Liquid ASS in a bottle small enough to hide in the palm of your hand. The bottle dispenses our nasty elixir in a thin, invisible, silent stream, thus equipping the prankster with stealth and speed. These characteristics of Liquid ASS make it the perfect practical joke product.” How true that is probably depends on your sense of humour and which end of the stream you find yourself



“An odour problem beyond our worst expectations”

on. The US military really liked it, though; they have adopted it for use in training field medics, where it is used to simulate the smell caused by injuries involving a tear in the intestine that result in waste leaking into the abdominal cavity.

The US military have form with evil smells, though; they thought they had nailed it with a substance known as ‘US Government Standard Bathroom Malodor’. This was synthesised to produce a standardised evil stench that simulated that of field latrines in order to test cleaning products – but it was so promising that they then attempted to weaponise it, commissioning Pamela Dalton, a cognitive psychologist at the Monell Chemical Senses Center, to develop a non-lethal stench weapon that could be used in the field. She found that there was almost no universal consensus on what actually smelt bad – it depended on people's cultural background – but pretty much everyone agreed that Standard Bathroom Malodor

was exceptionally foul. As a result, Dalton combined it with a number of other chemicals – including those that give rotting corpses their distinctive smell, plus sulphur and a sweet, fruity overtone – to develop a liquid known as “Stench Soup” that could be used as an area denial weapon. The result has been described as something that “smells something like a putrescent corpse lying on a mound of human excrement laced with rotten eggs and overripe fruit. Only worse”, and “Satan on a throne of rotting onions”. The actual recipe, though, remains a military secret.

None of these, however, comes close to the feral intensity of a chemical called thioacetone ((CH₃)₂CS). Chemist David Lowe says: “It reeks to a degree that makes people suspect evil supernatural forces.” He cites an occasion when thioacetone was accidentally synthesised in a lab in Freiburg, Germany, in 1889 and escaping fumes resulted in what a first-hand report described as “an offensive smell which spread rapidly over a great area of the town, causing fainting, vomiting and a panic evacuation.” As thioacetone is only stable as a liquid at -20 degrees, Lowe suspects the Freiburg horror was probably the result of thioacetone derivatives, but concedes that all these are likely to smell pretty evil.

With its reputation going before it, thioacetone chemistry was pretty much left alone until 1967, when British researchers Victor Burnop and Kenneth Latham, at an Esso research station in Abingdon near Oxford, decided it was worth looking into once more as a potential source of new polymers. This did not go well. After synthesising a tiny amount, they swiftly found themselves ostracised, as even with containment and protective clothing they still ended up carrying a hideous miasma with them: “Two of our chemists who had done no more than investigate the cracking of minute amounts of trithioacetone found themselves the object of hostile stares in a restaurant and suffered the humiliation of having a waitress spray the area around them with a deodorant.”

It got considerably worse when an accidental unstopping of a thioacetone residue bottle created what the researchers described as “an odour problem beyond our worst expectations” and an immediate complaint of nausea and sickness from colleagues working in a building 200 yards away. The research went no further, but by now they had calculated that all it takes is a single drop to make an area of half a square kilometre intolerably smelly. It still remains unclear what exactly it is about the structure of thioacetone that makes it reek so intensely, but unsurprisingly no one seems particularly interested in investigating further.

FURTHER READING

Derek Lowe, “Things I Won't Work With: Thioacetone”, https://blogs.sciencemag.org/pipeline/archives/2009/06/11/things_i_wont_work_with_thioacetone
Randall Munroe, “What's the World's Worst Smell?”, www.nytimes.com/2020/02/17/science/worst-odor-smell-thioacetone.html

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