

Novapurge and Ammonia Vapors

As any user of **Novapurge** (or any other ammonia-bearing chemical purging compound) can tell you, use of the product releases ammonia into the atmosphere around the equipment being purged. It's natural for users to ask "How much ammonia?" and "Is it harmful to me?"

NOVACHEM is committed to both the effectiveness of its products and their safety in use. We offer this TechNote to respond to some questions and to make sure you can do your part in achieving these goals.

How much ammonia is too much?

The limits to ammonia exposure in the industrial workplace are contained in the OSHA standard (officially known as CFR 29 Part 1910) in a table, "Table Z-1-A – Limits for Air Contaminants". Ammonia is listed as having a "STEL" of either 35 ppm or 27 mg/m³. (These levels are listed on the Material Safety Data Sheets (MSDS's) for **Novapurge**.) Let's look at what that means. STEL stands for "Short Term Exposure Limit" and is defined (in Section 1910.1000(a)(5)(ii) as "the employee's 15 minute time weighted average exposure which shall not be exceeded at any time during a work day...". The table notes that "ppm" is "parts of vapor or gas per million parts of contaminated air by volume..." and that "mg/m³" is "approximate milligrams of substance per cubic meter of air." The OSHA standard requires that the ammonia concentrations in industrial environments be kept below these levels.

How much ammonia is in Novapurge?

A pound of **Novapurge Ready-Mix** has in it about 2.7 grams of ammonia. That's about 6/10 of 1% of the **Novapurge**. Before the **Novapurge** is used, the ammonia is locked up chemically (just a little gets emitted in the container, which is why you can sometimes pick up an ammonia aroma when you take off the lid.)

All of the ammonia in **Novapurge** is liberated during the purging process. In the extruder, during the heat soak, the thermal energy breaks up **Novapurge's** chemical package and the ammonia makes its way into the environment.

How much ammonia is the user exposed to?

The answer we have to give here is going to seem like cheating, but it's not. We have to say "It depends!"

The concentration of ammonia in the vicinity of the equipment being purged depends on the following factors:

- How much **Novapurge** is used.
- How high the purging temperature is (high heats release the ammonia faster).
- How well ventilated the area is (i.e., how fast the air exchange rate carries away the ammonia).

Obviously, use of even a small amount of **Novapurge** at high temperature in a confined and poorly ventilated area will result in fairly high concentrations of ammonia. At the same time, even a large amount of **Novapurge** (such as a large extruder would require) will release acceptable amounts of ammonia if good exhaust ventilation is provided.

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Ammonia: What to Do?

We believe that if your shop is well ventilated with good fume exhaust systems, you will have no problem with ammonia. If any operators complain of excessive ammonia smell, or tearing of their eyes under normal purging practices (i.e., nobody leaned over the throat of the machine and took a deep breath), then you should consider the following actions:

- Review the general adequacy of the ventilation in the area of the equipment.
- Obtain ammonia concentration measuring devices from a safety equipment supply house (look in the catalog under "Gas Detectors"). They are rather inexpensive and will tell you what you are dealing with.
- Call NOVACHEM's toll-free Technical Support Line (1-800-762-3984 throughout the U.S. and Canada) to discuss the issue. We can suggest procedures that may reduce ammonia related difficulties.

Once again, we want to emphasize that NOVACHEM is committed to the safe and effective use of its products. Call us with any questions you may have in this area.

One of a series of Technical Notes designed to help users of Novapurge make more effective use of these products from:

NOVACHEM
955 Connecticut Avenue
Bridgeport, Connecticut 06607-1222

If you have questions or suggestions for an additional TechNote please call us at:

1-800-7623984