# TARGET-7 Vapor Mitigation and Neutralizing Agent

## Description

TARGET-7 Vapor Mitigation and Neutralizing Agent will mitigate dangerous vapor releases and simultaneously neutralize the spilled material without causing additional vapor release. The TARGET-7 technology allows for a one-step application to both mitigate vapor release from a spill and neutralize the spilled material. This has traditionally been accomplished in a two-step process with two different products and two different methods of application. The ability to perform this task in one step is critical when there is a dangerous spill of fuming acid or other hazardous chemicals – time is of the essence. Once TARGET-7 agent is applied and has formed its cover on the spill, there is no need to apply another neutralizing agent which would break the foam blanket thus requiring re-application of the foam agent; also complicated subsurface application of a neutralizing agent would not be required. The outcome is a stable foam blanket to suppress vapor release along with the drop-out of a neutralizing agent that will neutralize the spill as close as possible to a pH of 7.

TARGET-7 agent is a foam concentrate formulation that can be mixed with either an acid or alkaline water-based solution and discharged through an air-aspirated foam discharge device to produce an expanded foam. The foam produced is extremely stable, meaning that it will slowly release its solution from the bubble walls and neutralize the spill. For an acidic spill (such as $CLO_2$), the foam will be created from an alkaline water solution. For an alkaline spill (such as $NH_3$), the foam will be created from an acidic water solution.

The foam blanket serves three distinct purposes:

1. It will serve as the source for the neutralizing solution.
2. It will act to suppress vapor release from the spill.
3. It will act as a natural gas/vapor scrubber.

In addition, by choosing the type of acid or alkali used to make the foam solution, and by controlling the rate at which the foam releases its solution from the bubble walls, the TARGET-7 agent process will then control the acid/base neutralization reaction. This in turn will help prevent too much heat from being generated due to the heat of neutralization.

## Application

TARGET-7 agent is a unique product in which application rates are defined case by case dependent on the hazard and its vapor pressure. Other variables that are required to determine the application rate include the type and concentration of the spill material, temperature of the spill material, as well as the surface area and total volume of the hazard that is being protected. When looking at a particular hazard, be sure to consult with Johnson Controls Applications Engineering for design of the equipment and the use rates of TARGET-7 agent.


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The types of hazardous products TARGET-7 agent is suited for include chlorine dioxide, oleum, chlorosulfonic acids, sulfur trioxide, liquid ammonia, and a variety of other fuming acids. Consult with Johnson Controls for the hazard you wish to protect.

## Foaming Properties

When used with fresh, salt, or hard water at the correct dilution with most conventional foam-making equipment, the expansion will vary depending on the performance characteristics of the equipment. Typical aspirating discharge devices produce expansion ratios of 5:1 to 10:1 depending primarily on the type of aspirating device and flow rate. For vapor mitigation where prolonged vapor suppression is desirable, a higher expansion ratio (20:1 and greater) is recommended for two reasons:

1. The thicker blanket will last longer thus allowing TARGET-7 agent time to both hold the vapors down and neutralize the spill.
2. If a course hose stream is applied to this type of hazard, the vapor will be readily liberated, thus a gentle application is recommended to minimize turbulent action. A very effective device is a medium-expansion nozzle such as the ANSUL® Model KR-M2 and KR-M4.

## Proportioning

TARGET-7 agent can be easily proportioned (at the correct dilution) using most conventional proportioning equipment such as:

1. Balanced pressure and in-line balanced pressure pump proportioning.
2. Balanced pressure bladder tank proportioner.
3. Around-the-pump proportioner.
4. Fixed or portable in-line venturi proportioners.
5. Handline nozzles with fixed induction/pickup tubes.

TARGET-7 agent will typically be proportioned at 6%; occasionally a 3% ratio will be recommended by Johnson Controls Applications Engineering. It will be specific to the hazard to be protected.

Mobile units such as pre-piped bladder tanks on a single/double-axle cart or a 36 gallon foam cart with medium expansion nozzle are viable and flexible options to a fixed TARGET-7 system.

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## Proportioning (Continued)

The TARGET-7 agent can also be pre-mixed and stored with the neutralizing acid/caustic.

The minimum and maximum usable temperatures for TARGET-7 agent in this equipment are 35 °F (2 °C) and 120 °F (49 °C) respectively.

## Storage/Shelf Life

When stored in the packaging supplied (polyethylene drums or pails) or in equipment recommended by the manufacturer as part of the foam system and within the temperature limits specified, the shelf life of TARGET-7 agent is about 20-25 years.

## Compatibility

It is recommended that TARGET-7 agent not be mixed or stored with AFFFs or other firefighting agents. TARGET-7 agent is not a fire fighting or suppressing agent. Consult Johnson Controls Applications Engineering for acids/caustics that are compatible.

## Material of Construction Compatibility

Tests have been performed with TARGET-7 Agent verifying its compatibility with standard carbon steel black pipe and pipe manufactured from various stainless steel or brass compounds. Alternative pipe, fittings, and valves may be used in some cases if acceptable to the customer and/or the authority having jurisdiction.

Galvanized pipe and fittings must not be used in areas where undiluted concentrate will contact them since corrosion will result.

Please first consult Johnson Controls for specific guidelines concerning materials of construction.

## Ordering Information

TARGET-7 Vapor Mitigation and Neutralizing Agent is available in pails, drums, totes or bulk shipment.

| Part No. | Description | Shipping Weight |
|---|---|---|
| **Pails** | | |
| 428500 | 5 gal (19 L) | 45 lb (20.4 kg) |
| **Drums** | | |
| 428499 | 55 gal (208 L) | 495 lb (224.5 kg) |
| **Totes** | | |
| 428550 | 265 gal (1,003 L) | 2465 lb (1118 kg) |
| **Bulk** | | |
| 428498* | | |

*For bulk orders, consult an account representative.

Safety Data Sheets (SDS) are available at www.ansul.com

**Note:** The converted values in this document are provided for dimensional reference only and do not reflect an actual measurement.



**Note:** While NFF (also known as AR-SFFF) agents may be compatible with existing AFFF and/or NFF hardware, system contamination from fluorinated agents may exist if hardware and piping is not replaced upon conversion to non-fluorinated agents.