

Safe Handling - Dimethylamine

1. Product Description – Physical Properties:

Dimethylamine is a colorless, flammable liquefied gas with a characteristic fishy or ammonia type odor

Chemical Formula – $(\text{CH}_3)_2\text{NH}$

CAS 124-40-3 at 100% Volume

2. Specific Hazards

DANGER!

FLAMMABLE GAS

MAY CAUSE FLASH FIRE

CAUSES RESPIRATORY TRACT, EYE AND SKIN BURNS

MAY BE HARMFUL IF SWALLOWED

MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA

CONTENTS UNDER PRESSURE

Keep away from heat, sparks and flame

Do not puncture or incinerate container

Do not breathe gas

Do not ingest

Do not get on skin or clothing

May cause target organ damage, based on animal data

Use only with adequate ventilation

Wash thoroughly after handling

Keep container closed

Do not get in eyes, on skin or on clothing

3. Material Safety Data Sheet (MSDS)

Airgas MSDS # 1020 is available for download at www.airgas.com or ask your Airgas associate for a copy

4. First Aid

See MSDS

5. PPE

See MSDS

6. Shipping Description

If over 1000 lbs. – UN 1032, Dimethylamine, Anhydrous, RQ, 2.1

If under 1000 lbs. – UN 1032, Dimethylamine, Anhydrous, 2.1

Hazard Class – 2.1

Markings, Labels – Flammable Gas (2)

7. Available Containers:

Container	DOT Spec	Nominal Dimensions (D x L)	Average Tare (Lbs)	Average Internal Volume(ft ³)	Product Capacity (Lbs)
350 (A-1)	4BW240	16 x 50	75	3.83	125
½ Ton (A-5)	4BW240	30 x 57	315	16	550

NOTE: All Containers are shipped with a vapor (head) pressure of 26 psig at 70°

8. Valves

Type – CGA 705, With Washer, Hand wheel Operated (unless otherwise noted)
 Connection Torque - 40 – 60 ft lbs
 Configuration - All cylinders are configured with double valving to allow either liquid or gas withdrawal
 Orientation - Valves are oriented in such a position to allow for ease of hook up

9. Pressure Relief Device (PRD)

A PRD is not required as per CGA S-1.1

10. Handling

CAUTION:

Cylinders should only be moved with a suitable fork lift

Do not ingest
 Avoid contact with eyes, skin and clothing
 Keep container closed
 Use only with adequate ventilation
 Keep away from heat, sparks and flame
 To avoid fire, minimize ignition sources
 Use explosion-proof electrical (ventilating, lighting and material handling) equipment
 Do not puncture or incinerate container
 Wash thoroughly after handling
 High pressure gas
 Use equipment rated for cylinder pressure
 Close valve after each use and when empty
 Protect cylinders from physical damage; do not drag, roll, slide, or drop
 Use a suitable hand truck for cylinder movement
 A-1 and A-5 Cylinders are equipped with a forklift base for ease of movement



11. Storage

Keep container tightly closed

Keep container in a cool, well-ventilated area

Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over

Cylinder temperatures should not exceed 52 °C (125°F)

12. Recommended Equipment for Proper Usage:

1. Stainless steel positive seal regulator, part number Y11-C444 with a maximum outlet pressure of 100 psig
2. Line pressure relief valve rated to 110 psig maximum
3. Check Valve (2) part number Y33-442 (Installed in-line)

NOTE:

Check valves should be put on a scheduled maintenance program to be replaced in intervals that are consistent with use but at least every six months

13. Hook Up Procedures:

CAUTION:

If nitrogen is used to pressurize cylinder for liquid withdrawal, a suitable safety device must be installed to prevent over pressurization of the cylinder. Also, a dual check valve configuration must be installed in the process line to prevent pressure back flow into the cylinder.

Do not exceed 100 psig (50– 100 psig is recommended) regulated nitrogen pressure to the cylinder.

FAILURE TO COMPLY CAN RESULT IN CATASTOPHIC CYLINDER OR LINE FAILURE

13.1 If withdrawing liquid with a nitrogen pad:

- 13.1.1 Insure valves are tightly closed
- 13.1.2 Remove Dust Caps from Valve Outlets
- 13.1.3 Install Regulator with Nitrogen Line to Vapor Valve – Install Washer and torque fitting to 40 – 60 ft lbs.
- 13.1.4 Install Product discharge line to liquid valve – Install Washer and torque fitting to 40 - 60 ft lbs
- 13.1.5 Slowly open liquid valve allowing product to fill the process line
- 13.1.6 Adjust nitrogen pressure to desired setting (see note above regarding maximum pressure)
- 13.1.7 Slowly open Vapor valve allowing nitrogen pressure to the cylinder

13.2 If withdrawing vapor only

- 13.2.1 Insure valve is tightly closed
- 13.2.2 Remove Dust Cap from Vapor Valve
- 13.2.3 Install Product discharge line to Vapor Valve – Install Washer and torque fitting to 40 - 60 ft lbs
- 13.2.4 Slowly open valve allowing product to fill the process line

14. Disconnect Procedures:

14.1 If withdrawing liquid with a nitrogen pad

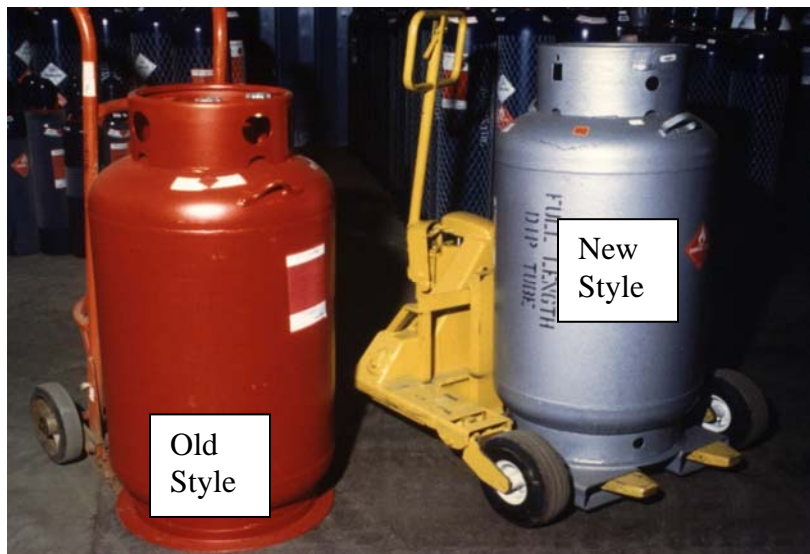
- 14.1.1 Close Vapor Valve
- 14.1.2 Reduce regulated Nitrogen Line pressure to zero and depressurize line
- 14.1.3 Close Liquid Valve
- 14.1.4 Remove Nitrogen line and regulator – use caution as there may be residual pressure in the nitrogen line
- 14.1.5 Install Valve Dust Cap
- 14.1.6 Open Liquid valve and vent all residual cylinder pressure to appropriate receptacle
- 14.1.7 Close Liquid Valve
- 14.1.8 Install Valve Dust Cap

14.2 If withdrawing vapor only

- 14.2.1 Close Vapor Valve
- 14.2.2 Remove process line – use caution as there may be residual pressure and/or product in the line
- 14.2.3 Install Valve Dust Cap



Typical A-5 Cylinder Handling



Typical A-1 Cylinder Handling



Typical Valve Configuration (A-1, A-5 Cylinders)



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