Oil rose (*Rosa damascene* Mill.) flowers were hand-harvested on 1 July 2010 and stored immediately at 0°C and 90±5% relative humidity for 30 days in controlled atmosphere condition (3% O₂ + 15% CO₂) with (C2) or without (C1) ethylene. Weight loss, respiration rate, ethylene production, petal color, sensory evaluation (general appearance, wilting and drying) and essential oil content were determined at harvest date and at 10-day intervals during cold storage. Petals stored in C2 (with ethylene) lost less fresh weight during storage than those stored in C1 (without ethylene). Rates of respiration and ethylene production were lower in petals stored in C1 than those in C2. The hue value of petals stored in C1 was higher than those of C2. The pink color of petals stored in C2 turned to light pink color at the end of the storage. Our findings show that oil rose petals could be stored at 0°C and maintain excellent quality even in air contaminated with ethylene for 10 days with no loss of essential oil content.