

# SYNTHESIS, CHARACTERISTICS, AND LAWS OF COMBUSTION OF CYCLIC NITRAMINES CONTAINING ETHYLENEDINITRAMINE GROUP

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**Abstract:** The article describes the combustion of cyclic nitramines containing the ethylenedinitramine group  $(\text{CH}_2\text{NNO}_2^-)_2$ . The synthesis of cyclic nitramines: dinitropiperazine (dazin), dinitrodiazocyclopentan (pentogen), trinitrotriazacycloheptan (geptogen), oxygeptogen, ethylenedinitrourea (EDM), and alkyldinitrotriazacycloheptans was carried out. Physical and chemical characteristics, some of explosive properties, and laws of combustion of 9 substances including RDX were studied. The dependence between the laws of combustion and their chemical structure was discovered. The correlation between combustion velocity and explosive characteristics was obtained.

**Keywords:** synthesis; nitro compounds; nitramines; capacity of reaction; thermochemistry; detonation; combustion; sensitivity to impact; heat of formation and explosive transition

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