Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Pharmaceuticals and Pharmaceutical Ingredients - XRIN 0694-XC120

(ii) the extent to which domestic production of pharmaceuticals and pharmaceutical ingredients can meet domestic demand;

Alchem Laboratories Corporation

Alchem Laboratories Corporation (Alchem) provides custom synthesis of new chemical entities, process development, R&D / cGMP manufacturing of active pharmaceutical ingredients and bulk production. Alchem is a certified Small Businesses (less than 500 employees). Alchem has a strong history of partnering with the USG, industry, and universities on multiple programs.

Alchem Laboratories Corporation was founded as a research and development organization and has successfully performed in numerous contracts with leading pharmaceutical companies and institutions as well as the NIH, DOD and BARDA (six active multi-year contracts no. HHSN261201700007I, W81XWH18D0028, 75N95019D00028, 75N98019D00057, 75N93021D00002 and MCDC-19-05-0001 under W15QKN1691002) to provide services that include (1) design and synthesis of novel compounds, (2) GMP synthesis of novel compounds and APIs at the kilogram scale, (3) chemical synthesis process development and optimization, (4) formulation development and optimization, (5) analytical method development and validation, (6) cGMP manufacturing of APIs and topical, oral, and injectable products, (7) stability studies for APIs/intermediates and drug products, (8) documentation for all stages of drug development.

Alchem Laboratories Corporation, a Florida-based company founded in 1996 specializing in cGMP manufacturing of APIs, including USP APIs and NCEs in development, has manufactured hundreds of different APIs for government and industry partners and currently supports these requirements at the multi-kilogram scale. Alchem has manufactured multiple USP compounds, including cisplatin, carboplatin, and phentolamine at the kilogram scale and currently supports API manufacturing in ten different DMFs. Alchem Laboratories has manufactured APIs and drug products for over 80 clinical trials in the last 10 years, including 18 active clinical studies, listed in clinicaltrials.gov. Alchem proposes to support immediate manufacturing, testing and storage of APIs to potentially mitigate supply chain disruptions during future national emergencies and/or pandemic events.

Alchem has over 25 years of experience in the development and scale-up of chemical synthetic methods, assays and technology and are well prepared and experienced to facilitate GMP manufacturing of USP, FDA Drug Shortage List APIs and anti-microbials according to USG requirements. Alchem has extensive API synthesis, formulation and manufacturing experience in oral and injectable products. Alchem currently has 8 large-scale reactors and mixers up to 200L, an industrial spray dryer, and facilities to support multiple clinical and commercial

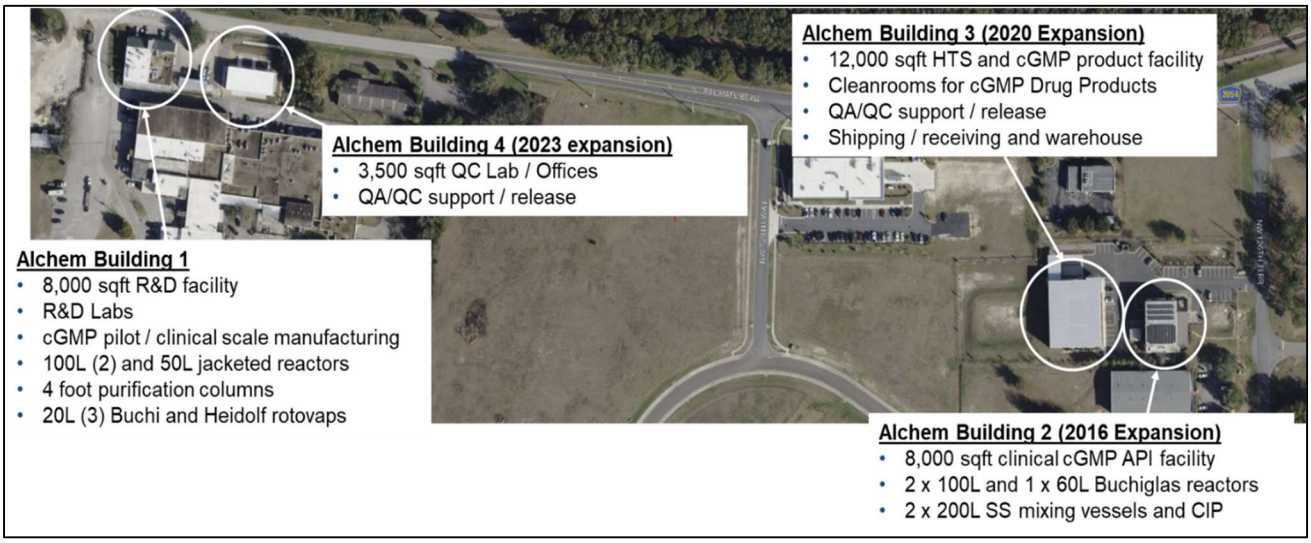
products. Alchem also has high potency API (HPAPI) and cytotoxic manufacturing capabilities. Alchem Laboratories Corporation consists of four buildings with synthesis and manufacturing laboratories, cGMP clean areas, Quality Control laboratories, Quality Assurance, Accounting Offices, Maintenance Workshops, and other auxiliary offices. The team is qualified and experienced, able to handle practically any pharmaceutical development project at laboratory, pilot, clinical and commercial scale.

Adequate analytical instrumentation/equipment at Alchem will be used for purity and confirmation of USP monograph specifications including but not limited to high performance liquid chromatography (HPLC), Infrared (IR), Nuclear Magnetic Resonance (NMR), Ultraviolet (UV) and/or Mass Spectroscopy (MS). Additionally, Alchem will conduct stability testing of each drug substance. For identity tests, proton/carbon-NMR, MS, IR, UV, melting point and elemental analysis, will be used; for purity and quantitative analyses, HPLC methods will be employed; for optical purity, optical rotation and chiral HPLC will be used as needed. Performing an assessment of polymorphism by High Resolution XRPD (HR-XRPD), LCMS, DSC and MS of each API may also be conducted. Further, Alchem will provide optical rotation, heavy metals and elemental analysis as required.

Alchem performs safety assessments for API's and intermediates as an integral part of every new project according to the GMP Manual and Safety Manual & Chemical Hygiene Plan. Risk assessment, which includes risks and mitigation strategies, includes (1) Concurrent work/adjacencies, (2) manufacturing campaign and changeover, (3) disinfectant / decontamination efficacy and cleaning validation requirements, and (4) personnel / material / waste flows. Alchem Laboratories GMP Manual includes FDA and ICH requirements, and Safety Manual & Chemical Hygiene Plan is in compliance with safety regulations promulgated by OSHA and EPA. The company has implemented a strict training program in handling of toxic agents, protection of laboratory personnel and procedures for handling emergencies such as fire, chemical spills, explosions, etc. The Safety Manual & Chemical Hygiene Plan of the company provides detailed description of company policy on safety and security, and instructions on handling of hazardous and potentially hazardous situations.

cGMP Demonstration Batches of 1-5 kg of APIs will be manufactured and tested, including sufficient material to support cGMP release and stability testing. Samples from the GMP batch will be filled under argon using approved master batch records according to methods established in the non-GMP batches. cGMP manufacturing is performed in accordance with Current Good Manufacturing Practice (cGMP), US Code of Federal Regulations (21 CFR parts 210 and 211), Good Manufacturing Practice for the Biological Industry, US Code of Federal Regulations (21 CFR parts 600, 606 and 610) and European Community Directive European Directive 2003/94/EC in relation to medicinal products for human use and investigational medicinal products for human use, as interpreted by ICH Harmonized Tripartite Guideline. Quality Control executes in-process and lot release testing per Quality Assurance approved batch records and sampling plans. Quality Assurance provides the final review and release of cGMP for each API ensuring that each product lot meets all technical specifications and is acceptable for use in nonclinical studies, clinical studies, or commercial distribution. Release testing of all proposed specifications listed below will be performed according the USP specifications. Upon review of the executed batch record and test results, the batch is released by Quality Assurance.

Alchem Laboratories has fully operational facilities equipped for research and development work in the areas of synthesis of chemicals and pharmaceuticals from milligram to kilogram scale. Alchem Building 1 laboratories have all the necessary equipment for organic (and inorganic) synthesis in support of current contracts. Alchem Building 2 expansion became operational with GMP API manufacturing activities in March 2017. Building 3 became operational for GMP Drug Product Manufacturing and discovery activities in December 2020 and Building 4 QC laboratory expansion was completed in early 2023.



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