



**National Fire Protection Association**  
**Rules for the Certification and Recertification of Marine Chemists**  
**As amended and effective January 01, 2012**

The following Rules are established by the Board of Directors of the National Fire Protection Association (NFPA) for the certification and/or recertification of Marine Chemists. These Rules also establish the requirements for Candidates and Marine Chemist Trainees.

For the purpose of these Rules, the following definitions shall apply:

**Applicant**

A person applying for certification or recertification as a Marine Chemist.

**Association**

The National Fire Protection Association.

**Board**

The Marine Chemist Qualification Board appointed by the Board of Directors of the National Fire Protection Association.

**Candidate**

A person applying for registration as a Marine Chemist Trainee.

**Marine Chemist**

The holder of a valid Certificate issued by the National Fire Protection Association in accordance with the "Rules for the Certification and Recertification of Marine Chemists" establishing the holder as a person qualified to determine whether construction, alteration, repair, lay-up, or shipbreaking of vessels, which may involve hazards covered by the Standard, can be undertaken with safety.

**Standard**

The Standard for the Control of Gas Hazards on Vessels, NFPA 306, in its most recent issue, as published by the National Fire Protection Association.

**Rules**

The Rules for the Certification and Recertification of Marine Chemists as approved by the Board of Directors of the National Fire Protection Association.

**Trainee**

A person who has been registered to begin training under Section VI.A of these Rules.

If a word is not otherwise defined in these Rules the definition found in Merriam Webster's Collegiate Dictionary 11<sup>th</sup> Edition shall be used.

**Section I. Certificate.**

- A.** There shall be a Certificate issued to successful Applicants as evidence that the holder has met the qualifications for certification or recertification as a Marine Chemist.
- B.** Those Certificated Marine Chemists who have evidenced additional experience, training and knowledge in Flammable Cryogenic Liquids as required by Section V of these Rules shall be authorized to issue certificates under the requirements of the Standard. Their certificates shall be endorsed accordingly.

## **Section II. Qualifications -- General.**

All persons to whom these Rules apply shall:

- A.** Be of and maintain good character, and physically able to perform the duties of a Marine Chemist.
- B.** Be citizens of the United States. Under special or unusual circumstances, and after consultation with the President of the NFPA, the Board may consider foreign nationals for Certification.
- C.** Furnish the Board with such evidence of their training as the Board considers necessary or advisable, as set forth in published Rules therefore.
- D.** Affirm in writing an intention and ability to practice actively as a Marine Chemist.
- E.** Use only the Standard Marine Chemist certificate form as approved and presented in the Standard when acting as a Marine Chemist applying the Standard.
- F.** Perform all work in accordance with the requirements of the Standard and its official interpretations when acting as a Marine Chemist.
- G.** Indicate an understanding of and intention to comply with these Rules by signing a copy of these Rules as presented at the time of Certification and Recertification, or at such times as these Rules change.

## **Section III. Qualifications – Professional.**

The Board considers the professional requirements listed below essential for favorable consideration of any application. The Board may consider other professional achievements as equivalent to any or all of the below listed items based on information available at the time of its deliberations.

**A.** Each Applicant shall have at least a Bachelor's Degree from a college or university accredited by an accrediting agency recognized by the Secretary of Education of the United States or accrediting agency of another country as acceptable to the Board. Work shall include the following college level courses intended for science majors:

1. Two semesters or three quarters of general inorganic chemistry with labs.
2. Two semesters or three quarters of organic chemistry with labs.
3. One semester or two quarters of analytical chemistry with lab, including instrumental analysis (effective 01 August 2011).
4. One course in industrial hygiene sampling and analysis.

**B.** The education, training, knowledge, and experience of any Applicant shall include, but not be limited to, the following subjects:

1. Basic Marine and Shipyard Safety
2. Fire Prevention and Emergency Rescue Procedures
3. Combustion and Explosion Technology
4. Entry into Confined Spaces

5. Principles of Gas Freeing and Shipboard Test Procedures
  6. Tank Cleaning Procedures
  7. Petroleum Chemistry & Testing of Petroleum Products
  8. The Fundamentals of Industrial Hygiene
  9. Properties of Flammable and Combustible Materials
  10. Properties of Toxic Gases, Vapors, and Fumes
  11. Properties of Hazardous Cargoes and Materials
  12. Properties of Fumigants and Fumigant Testing
  13. Properties of Tank Coatings and Preservatives
  14. Testing for Toxic Gases, Vapors, Fumes and Residues
  15. Properties of Liquefied Natural and Petroleum Gases
  16. Test Instruments and Calibration thereof
  17. Procedures for personally determining conditions prior to issuance of a certificate for subsequent work.
  18. Certificate writing including minimum content.
- C.** The Applicant shall satisfactorily complete the then current approved Marine Chemist training curriculum in order to substantiate compliance with Section III B, above.
- D.** Each Applicant shall complete to the Board's satisfaction an examination on the Standard and applicable United States Coast Guard (USCG) and Occupational Safety and Health Administration (OSHA) regulations, as amended to the date of application, and other technically related or appropriate standards, rules, or regulations considered necessary by the Board.

#### **Section IV. Qualifications -- Practical.**

In addition to the professional qualifications set forth in the preceding section:

- A.** Each Applicant, while a Trainee, shall have completed at least six (6) months of supervised training in all tests and inspections required prior to the issuance of a Marine Chemist's certificate as required by the Standard. At least three (3) Marine Chemists shall directly supervise this training. The three (3) training supervisors shall not be from the same company or organization. Each shall supervise at least forty (40) hours of the Applicant's shipboard training required by Section IV.B hereof. All trainers shall have been certified as a Marine Chemist for at least two (2) years.
- B.** Each Applicant, while a trainee, shall have not less than three hundred (300) hours of supervised training aboard a variety of types of both ocean-going and inland vessels as covered by the Standard. The maximum credit for training in any one type of vessel is ninety (90) hours. In order for credit to be given, however, training in any one type of vessel shall exceed a minimum of thirty (30) hours.

C. In addition to the above requirements, each applicant shall have completed at least three years experience, as follows:

1. One year or more full-time employment in the analysis of physical samples similar to those routinely analyzed by Marine Chemists. This employment is to be in a laboratory or other similar work environment acceptable to the Board.
2. The remaining time, but not less than one year, must be in full time employment in marine construction or repair, or in another marine industrial environment acceptable to the Board.

D. Each Applicant shall have a working knowledge of the construction of all common types of vessels including hull and superstructure compartmentation systems, machinery spaces, cargo handling systems, and piping systems.

E. The Board considers the above practical requirements essential for favorable consideration of any application. The Board may consider other professional achievements as equivalent to any or all of the above listed items based on information available at the time of its deliberations.

## **Section V. Qualifications -- Endorsements.**

### **A. Flammable Cryogenic Liquid Carriers Endorsement.**

Each Marine Chemist who submits satisfactory evidence of compliance with the following required experience, training and knowledge shall receive a Flammable Cryogenic Liquid Carriers (FCLC) endorsement on the Marine Chemist's Certificate attesting to the fact of authorization to issue certificates under the requirements of the Standard.

Such endorsement shall be valid for a period of time concurrent with the Marine Chemist's certification, not to exceed five (5) years from the date of issue.

1. Each Marine Chemist so applying shall show evidence of:
  - a. Possession of a valid Marine Chemist's Certificate issued under Section VI. B. of these Rules.
  - b. Thorough familiarity with construction features of all types of Flammable Cryogenic Liquid Carrier cargo containment and handling equipment.
  - c. Knowledge of the location of gas detectors and temperature sensors aboard the vessels and familiarity with their operation.
  - d. Familiarity with hold space inerting and cargo tank cool down procedure.
  - e. Familiarity with hold space gas freeing and cargo tank warm-up procedure.
2. The Marine Chemist shall have conducted at least one gas testing survey aboard an FCLC vessel or have attended an approved training program with a liquefied natural gas (LNG) simulator under the direct supervision of a certificated Marine Chemist having the special endorsement for gas testing aboard such carriers.
3. The Marine Chemist shall submit to an oral, written or combination examination covering structural design of FCLC vessels, nomenclature pertinent to such carriers and their cargoes, applicable requirements of the Standard, pertinent requirements of 46 CFR Part 154 (USCG regulations for vessels carrying bulk liquefied gases) and such other subjects as may be included by the Marine Chemist Qualification Board.

## **B. Flammable Cryogenic Liquids Carrier Endorsement Renewal**

1. Renewal of the FCLC Endorsement shall only be considered by the Board for Marine Chemist who have satisfied at least one (1) of the following:
  - a. The Marine Chemist shall have conducted at least one gas testing survey aboard an FCLC vessel during his or her current five year certification period. Minimum requirement for renewal shall be the issuance of one (1) certificate during the most recent certification period. A copy of at least one (1) certificate issued to a FCLC vessel shall be submitted with the endorsement renewal request.
  - b. The Marine Chemist shall have attended an approved training program with an FCLC simulator during his or her current five-year certification period. Evidence of such attendance shall be submitted with the endorsement renewal request.
  - c. The Marine Chemist shall have satisfactorily completed the NFPA FCLC training module with an examination covering structural design of FCLC vessels, nomenclature pertinent to such carriers and their cargoes, applicable requirements of the standard, pertinent requirements of 46 CFR part 154 (USCG) regulations for vessels carrying bulk liquefied gases) and such other subjects as may be included by the Marine Chemist Qualification Board.
2. Applicants for FCLC Endorsement Renewal Shall Submit to the Board the following addition to required items under Section VI.C Recertification:
  - a. A letter requesting renewal of the Endorsement.
  - b. Evidence demonstrating completion of any one (1) of the requirements in Section V.B. 1 above.
3. The requirements of this section shall become effective on 01 January 2012.

## **Section VI. Application Procedures. Registration, Initial Certification and Recertification.**

Those persons actively working towards or having the intention to seek certification as a Marine Chemist shall register with the Board as a trainee. Registration as a trainee is necessary prior to accruing practical experience under section IV. A and/or B hereof.

### **A. Registration as a Marine Chemist Trainee**

1. A Candidate shall register with the Board.
2. Registration shall be completed on the specified form supplied by the Marine Field Service Specialist outlining the Candidate's initial qualifications and the persons they will train under.
3. A non-refundable fee of two hundred fifty dollars (\$250.00) shall accompany the registration form.
4. Each Candidate for registration as a Marine Chemist Trainee shall affirm in writing the intention to actively pursue certification, and upon certification to practice actively as a Marine Chemist.
5. The Board shall consider each application for registration and shall register the Candidate unless it finds reason why the Candidate is not likely to be qualified to apply for certification within a reasonable time. Acceptance of a Candidate for registration shall not provide any right to anticipate certification as a Marine Chemist. Rejection of a Candidate for registration shall not preclude re-registration in the future under a change of conditions.

6. Each Trainee shall annually provide the Board with an update of the status of his or her training on a form provided by the Marine Field Service Specialist.
7. A Trainee who fails to provide such annual report for two consecutive years, or who upon filing such reports fails, in the determination of the Board, to demonstrate adequate activity towards certification for two years, may after due notice and opportunity to be heard in writing, be removed as a Trainee by the Board. Such removal shall be without prejudice to a new application filed pursuant to these Rules.
8. Each Trainee shall complete all requirements for initial certification, except for the personal interview required by Section VI.B.2., within six years of the Board's acceptance of the application for registration. Failure to meet the six year requirement shall cause the registration to be terminated. After termination for this reason, the Trainee may be reinstated at the discretion of the Board. At the time of reinstatement, the Board shall determine the previous training it will accept, if any, and specify the Trainee's remaining requirements for certification.

## **B. Initial Certification**

1. Each Applicant for initial certification shall apply to the Board by way of the Marine Field Service Specialist by submission of the following:
  - a. Official application form, legible and properly completed, accompanied by the required non-refundable processing fee of two hundred fifty dollars (\$250.00) for initial certification
  - b. Not less than three letters of reference concerning the character and ability of the Applicant.
  - c. The names of all Marine Chemists involved in the Applicant's training.
  - d. A list of all vessels tested during the training period, including the date, name, time aboard, cargo, type and purpose of each test, work to be performed, serial number of Marine Chemist's certificate(s) issued and the name and number of the supervising Marine Chemist.
  - e. A personal thesis outlining the Applicant's knowledge of those items as assigned by the Board.
  - f. A licensed physician or licensed physician's assistant statement on a form provided by the Board attesting to the Applicant's physical and mental ability to perform the duties of a Marine Chemist.
  - g. Such additional evidence of the foregoing as may be required by the Board.
  - h. An agreement by the Applicant in writing on a form provided by the Board:
    - i. to submit a monthly report of his or her Marine Chemists' activities;
    - ii. to collect and submit the surcharge fees to the Marine Gas Hazards Control Program; and
    - iii. to comply with the Rules then in effect as amended.
2. An Applicant shall have a personal interview with the Board. At such interview, the Applicant and any persons brought by the Applicant to the interview who can attest by personal experience to the Applicant's qualifications and practical experience shall be afforded an opportunity to be heard. The application of any Applicant who fails after reasonable notice to appear at a scheduled interview shall be deemed withdrawn by the Applicant subject to renewed processing at the convenience of the Board.

### **C. Recertification**

The following procedures shall be followed for recertification:

- 1.** Recertification shall only be considered by the Board for Marine Chemists who have actively engaged in Marine Chemist professional activities during their current five year certification period. Minimum requirements for recertification shall be the issuance of ten (10) certificates each year during the most recent certification period.
- 2.** Applicants for recertification shall submit to the Board the following:
  - a.** An official application form, legibly and properly completed accompanied by an application fee of twenty five dollars (\$25.00)
  - b.** A resume of the Marine Chemist's activities during the current certification period and any other information on his or her professional activities during that period considered necessary by the Board.
  - c.** A licensed physician or licensed physician's assistant statement on a form provided by the Board, attesting to the Applicant's physical and mental ability to perform the duties of a Marine Chemist.
  - d.** Copies of ten (10) sequential, recently issued certificates with a brief summary or explanation of the circumstance requiring the certificate on a form provided by the Board.
  - e.** A list of the instruments and calibration equipment currently being used by the Applicant
  - f.** Evidence of completion to the Board's satisfaction of an examination on the Standard and applicable United States Coast Guard (USCG) and Occupational Safety and Health Administration (OSHA) regulations, as amended to the date of application, and other technically related subjects or appropriate standards, rules, or regulations considered necessary by the Board.
  - g.** Evidence of attendance at a minimum of three technical seminars sponsored by the Marine Chemist Association for the Marine Chemist's professional enhancement during the current certification period.
    - i.** One (1) shall be an Annual Seminar
    - ii.** One (1) shall be a Sectional Seminar; and
    - iii.** The remaining Annual or Sectional Seminar shall be at the discretion of the Marine Chemist.
    - iv.** Multiple sectional seminar attendance in the same calendar year shall not be counted as meeting the seminar attendance requirement
  - h.** Reports of any accidents involving the Applicant's Marine Chemist activities during the current certification period.
  - i.** Such additional evidence concerning a Marine Chemist's ability to apply the procedures and judgment required of Marine Chemists that the Board may deem necessary including, at the Board's discretion, an interview with the Applicant.
  - j.** Evidence that surcharge fee payments to the Marine Gas Hazards Control Program are current.
- 3.** Notwithstanding the provisions of Section VI. C. 1. above, in instances where an Applicant has been inactive as a Marine Chemist, or has failed to complete the aforementioned examination in a manner

satisfactory to the Board, the Board may require a personal interview and oral examination, a period of retraining, reexamination, or any combination thereof. Absent extenuating circumstances as determined by the Board the provisions of this section shall not be available to any applicant for two consecutive periods of recertification.

#### **Section VII. Reports.**

- A.** Marine Chemists shall submit monthly reports to the Marine Field Service Specialist that shall include:
  - 1.** A report of all certificates issued during the previous month on the current prescribed report form as supplied by the Marine Field Service Specialist of the Association.
  - 2.** A copy of one (1) certificate issued during the month. However, Marine Chemists may be required to submit a copy of each certificate issued during a specific time if required by the Board.
- B.** Marine Chemists shall send a statement of remittance to the designated custodian of the "Marine Gas Hazards Control Program" in accordance with the procedures established by them.
- C.** Marine Chemists and Trainees shall promptly notify the Marine Field Service Specialist of any change of address and other contact information (business or residence), and of any change of employment.
- D.** Marine Chemists are requested to report information promptly to the Marine Field Service Specialist, and provide reasonable documentation and reports as requested, regarding any fire or explosion on a vessel, the details of which are available to them because of their personal knowledge of the incident.
- E.** Marine Chemists shall notify the Marine Field Service Specialist within 24 hours of any accident occurring in connection with their professional Marine Chemist activities, or where to their knowledge the lack of a Marine Chemist was a factor and shall supply such reasonable documentation and reports as requested by the Marine Field Service Specialist.

#### **Section VIII. Revocation and Renewal of Certificates**

- A.** Certificates issued shall be valid for a period of five (5) years or such reduced or extended time or times as is considered appropriate by the Board unless the Certificate is sooner canceled due to receipt by the Board of evidence of the Marine Chemist's inability to apply consistently and safely the procedures and judgments required of Marine Chemists.
- B.** The Board reserves the right to suspend revoke or cancel the Certificate issued to a Marine Chemist at any time. The Board shall notify the Marine Chemist of such action by mailing the notice to the last known address of the Marine Chemist. The following are among the causes for which a Certificate may be suspended revoked or canceled.
  - 1.** Failure to comply with any of the foregoing requirements for reporting and notification.
  - 2.** Practicing as a Marine Chemist while the Chemist's ability to practice is impaired by alcohol, drugs, physical disability, fatigue or mental instability, or if the Chemist is habitually intoxicated by or engaging in the unlawful use of alcohol, narcotics, barbiturates, amphetamines, hallucinogens, or other controlled substances having similar effects.
  - 3.** If, after examination of the facts of any complaint filed with or coming to the attention of the Board, it is the opinion of the Board that the Marine Chemist is no longer qualified to be certificated.
  - 4.** Falsification of information on the application for certification and recertification.

**5. Failure to adhere to the Standard and its official interpretation.**

**C.** Upon receipt of information or a written complaint regarding an alleged misconduct or violation of the Rules for Certification and Recertification on the part of a Marine Chemist, the Secretary of the Board shall forward such information to the Board. After consideration of said information or written complaint and upon a review of any and all relevant information, the Board may take appropriate action under these Rules.

**D.** Where a suspension, revocation or cancellation may be contemplated by the Board, the Marine Chemist involved shall receive notice and an opportunity for a hearing before the Marine Chemist Qualification Board prior to suspension, revocation or cancellation. However, in circumstances in which information has come to the attention of the Board which gives evidence of the Marine Chemist's inability to apply the procedures and judgments required of Marine Chemists or where information has come to the attention of the Board which indicates that there may be a cause for suspension or cancellation of a Marine Chemist's Certificate, the Board may suspend the Marine Chemist's Certificate immediately and prior to a hearing, if the public interest and public health and safety require such action and the Board makes such a determination. In such case the Marine Chemist who has been suspended shall be promptly notified of such action by a notice being mailed to the last known address of the Marine Chemist. Thereafter, the Marine Chemist shall be afforded a hearing within ten (10) days of said suspension. Should the Marine Chemist request an adjournment of the hearing date, it may be granted at the discretion of the Board.

**E.** In circumstances where a Marine Chemist is notified of the Board's intention to conduct a hearing concerning the suspension, revocation or cancellation of the Marine Chemist's Certificate, the Marine Chemist may be served, at the Board's discretion, with a request to produce documents and information relating to the Chemist's activities. Failure to produce any requested information on a timely basis shall be sufficient grounds for suspension or cancellation at the discretion of the Board.

**F.** Prior to the scheduled hearing, the Marine Chemist shall be given notice of the charges. The Marine Chemist shall be afforded an opportunity to be heard by the Board and an opportunity to appear before the Board and present a defense.

**G.** Appeal from action taken by the Marine Chemist Qualification Board may be brought directly to the National Fire Protection Association Board of Directors.

**Section IX. Applicability**

Unless specified elsewhere in these Rules the effective date of these Rules as amended shall be 01 January 2012.