

13/07/2021 reference H4520

Hempel (Australia) Pty Ltd, Hempel (New Zealand) Ltd, 2-44 Graingers Rd, West-Footscray VIC 3012 Australia Ph +61(0) 3 8369 4900 contact Evert Hut Tech Service Mgr. ehut@hempel.com.

Contact via SATYA NAND Business Development Manager MIROTONE NZ LIMITED PO Box 58-149, Botany Auckland 2163 32 Cryers Road, East Tamaki Auckland 2013, New Zealand Mobile: +64-21-857-611 Email: nand@mirotone.co.nz

Global Proficiency Ltd for AsureQuality Ltd, Unit 2/25 Mareno Rd, (P O Box 1335) Tullamarine Vic 3043, Australia +61 3 9089 1151

Global Proficiency Ltd for AsureQuality Ltd, Ruakura Research Centre, 10 Bisley Road, Enderley, Hamilton 3241, P O Box 20474 Hamilton

To whom it may concern,

Hempel Mastic 45880

- Product description: surface coating, ambient temperature chemically cured 2-component epoxy coating material
- Product use: intended for surface coating in food areas & corrosion prevention as a physical barrier

"Passed AsureQuality assessment for food / beverage / dairy factory or surface coating in food areas, floors etc, as appropriate to properties (Hempel & tabled) with appropriate food distancing in application, curing, & post-inspection" H4520 with conditions. This assessment was prepared by Global Proficiency Ltd using HACCP principles to determine equivalence with food standards listed below. See <http://assessedproducts.asurequality.com>. This supports food Risk Management Programmes & other endorsements that may apply to this product include MPI regulated farm dairy approval, MPI dairy factory endorsement, MPI regulated non-dairy animal product approvals, EPA HSNO-OSH-environment approval (& previously AQIS).

Conditions:

- Used per instructions, legislation & GMP for surface coating in food areas, floors etc, as appropriate to properties (Hempel & tabled) with appropriate food distancing in application, curing, & post-inspection.
- The assessment is subject to notification of change and expires on 13/07/2026).
- The full report is attached for supplier review and verification. The assessment is activated by countersigning & inclusion of assessment precautions / assessment statement / MPI dairy precautions statement.

Prepared by Global Proficiency for AsureQuality Ltd... *R E G Hutchinson*

Supplier:..... Date:.....

Scope and purpose of the assessment:

- Asurequality assessment is a non-regulated, voluntary, and evidential certification by the supplier demonstrating equivalence with food safety standards, and also that product instructions address hazards for staff & equipment. The assessment is independently confirmed, without prejudice or guarantee, using information submitted by the supplier or from other sources. Confidentiality of the product formulation is maintained using coded material identifiers in the report, and appendices containing confidential information are provided only to the supplier.
- Scope: NZ checks (FSANZ, US FDA 21 CFR/ NSF, Food Chemicals Codex, EPA NZ, EU, French culinary listings or related data for equivalent safety). NZ background (Animal Products Act, Risk Management Programmes. Detergent & Sanitiser Manufacturer's Code of Practice, Detergent & Sanitiser Standards and Analytical Methods. Quality Manual - Assessment Procedures

Summary of assessment with risks highlighted:

- Prior registrations etc. (New AsureQuality assessment. USA FDA 21CFR175.300 low global extraction test within limits. EC Directive 2004/42/EC subcategory j re VOC, Lloyds Cert of approval ISO 14001:2014. COT independent ISO 12944-6 C4 passed vs metal plate corrosion. Grain non-tainting).
- Food safety (Is per distancing from food in applications proposed & USA FDA 21CFR175.300 low global extraction test within limits (including aqueous food) but composition compliance is by claim or inferred by presence of extraction tests (but could use partial composition in SDS). EC Directive 2004/42/EC subcategory j re VOC & Grain non-tainting tests).
- QA (Lloyds Cert of approval ISO 14001:2014).
- QC (n/a in this application except Microbiology safety from fungi etc by 175.300 of polymer type).
- Instructions –PDS -Description (2-component polyamide adduct, cured, high solids, high build epoxy paint, it forms as hard tough coating, has good wetting properties and low temperature curing). Recommended use (self-primed, surface tolerant paint system as intermediate or finish coat in heavy duty painting with low VOC & high build. For immersed minor repair, for recoat of polyurethane topcoat), temperature, certificates, physical constants, application details, surface preparation, application conditions, preceding coat etc. Certificates listed. Tested per 21CFR175.300 dry foodstuff & consult Hempel for details Complies European fire standard, Tested for non-contamination of grain for occupational health Great Britain, Approved for low flame spread, Complies with EC Directive 2004/42/EC subcategory j (viz limitation on emissions of volatile organics) Also Physical constants. Application details).
- Side effects (See SDS & HSNO HSR002669. COT independent ISO 12944-6 C4 passed vs metal plate corrosion. Grain non-tainting).
- Efficacy (hygiene is partial by anticorrosive performance data and composition & verbal advice it is generally robust and fool-proof & can be overcoated for further resistance)

Contents (This is a simplified report with sections 2-11 replaced by a summary on p1 and in the table in section 1)

0 Information is to be evidential (std 0).	1 Materials safety and residues etc
2 Material (other – function)	3 Quality assurance certificate
4 Purity (or Design, formulation, fabrication and finish).	5 Instructions
6 Freedom from apparent side effects	7 Efficacy or hygiene to meet food safety margins
8 Packaging safety.	9 Summary of submitted information etc
10 Standards/References - front page/may be attached	11 Contacts.
12 Confidential information re design, formulation etc.	13 Covering letter & then 14 Raw material confidential information

Risk Rating (failure/accident)

	Chemical	Microbiological
Incidence	Low	Low
Susceptibility	Low	Low (higher post heat treatment)
Severity	Low	Low
Total	Low	Low (higher post heat treatment)

Organics

For organic production when food is absent during use and residues are rinsed etc. Reference NZS8410 Organic Production section 10 Storage, transport, preparation and handling. 10.1.2 Where the premises vehicles and equipment are used solely for organic products: (a) Only those substances used in table D1 shall be used for housekeeping purposes in the presence of the product (note that product absence is already a requirement of this assessment). If other materials are used for cleaning, surfaces that could come in contact with organic products shall be flushed with potable water prior to re-entry of organic products, and any airborne substance dispersed. (b) If there are products of more than one organic status (e. g. organic and in conversion to organic), the requirements of 10.1.3 shall be followed as if the higher status organic product were in the presence of products not complying with this standard. 10.1.3 (Note that if not dedicated to organics then the plan must state how there is no non-organics inclusion including “sealing, labelling, documentation”).

Evaluation: Note that Standards vs. submission-responses yield compliance status in each of the sections below.

Nature of information

0 Standard: Assurance information is to be evidential/cross-registered/or ex accredited bodies (and approvals may need levels of independence for toxicity and efficacy).

- Prior registrations etc. (New AsureQuality assessment. USA FDA 21CFR175.300 low global extraction test within limits. EC Directive 2004/42/EC subcategory j re VOC, Lloyds Cert of approval ISO 14001:2014. COT independent ISO 12944-6 C4 passed vs metal plate corrosion. Grain non-tainting).

Raw materials:

1 Standard:

Raw materials are to be identified safe: traceably identified, non-toxic, and pure - depending on the level of contact. Raw materials are to be safe at residue levels with safety factors (simplified here eg per cross-registration of USFDA 21 CFR/ ANZF/ EU etc registrations factored for likely equivalence and recognising high 1.5 L milk consumption would have been required by FDA etc – refers to supplier confidential appendix but with identifiers excluded

Response

(Hempel) Hempel Mastic 45880 H4520 13-07-2021	Registrations Column. This rests on partial formulation data, instructions, lab tests (corrosion protection, food contact extraction testing re ISO 175.300 & non-tainting stored grain). C.f. (1) surface coating non-contact spec bellow & (2) food contact references list here (Food Standards Australia NZ, NICNAS AICS, US FDA 21 & 40 CFR/ NSF, Food Chemicals Codex, EPA NZ, EU, French culinary listings, WHO or MPI, or related data for equivalent safety). Background (Australia Accord, Animal Products Act, Risk Management Programmes, Detergent & Sanitiser COP, & Quality Manual - Assessment Procedures)	Purity column is n/a for non-incident contact (For other chemicals raw material purities to be per FSANZ purity wanted (as ingredient etc) FCC7 2010-2011 with GMP indicators & FSANZ also (require Pb<2, As<1, Heavy metals <40 mg/kg).
Old Dairy Industry Standard coatings checklist for which the critical element here is "does not release toxic material" ..as addressed in paragraphs below.	Coatings Standard for non-contact application (per previous MQM1 Approvals Manual lists): Monitor and advise any unsatisfactory performance.(to authors). Cleanability: able to be adequately cleaned by normal procedures (for that area of the premises) without damage to the surface. Free from cracks, crevices and have no soil collection areas. Resistant to water and water vapour. Resistant (including sheet wallboard jointers) with a low rate of moisture movement. Resistant to foods e.g. milk, cream, milk fat, whey, lactic acid, etc.	Resistant to chemicals (to 10% Sodium hydroxide, nitric acid, phosphoric acid, sulphuric acid, iodophors, QAC, etc. Toxicity: does not release toxic material under finished use conditions. Durability to (chipping, flaking, or delamination. (Normal) heat and water, Machinery vibration. And regular cleaning and sanitising. Resistant to impact, to thermal shock etc. (including jointers to NZDRI criteria +/- 5mm or if climate controlled +/- 2mm). Accounting for combinations of dry/wet, hot/cold, and severe conditions. Additional general assessment checks
HACCP analysis - aspects other than instructions.	Prior registrations etc. (New AsureQuality assessment. USA FDA 21CFR175.300 low global extraction test within limits. EC Directive 2004/42/EC subcategory j re VOC, Lloyds Cert of approval ISO 14001:2014. COT independent ISO 12944-6 C4 passed vs metal plate corrosion. Grain non-tainting).	Side effects (See SDS & HSNO HSR002669. COT independent ISO 12944-6 C4 passed vs metal plate corrosion. Grain non-tainting). Efficacy (hygiene is partial by anticorrosive performance data and composition & verbal

	Food safety (Is per distancing from food in applications proposed & USA FDA 21CFR175.300 low global extraction test within limits (including aqueous food) but composition compliance is by claim or inferred by presence of extraction tests (but could use partial composition in SDS). EC Directive 2004/42/EC subcategory j re VOC & Grain non-tainting tests). QA (Lloyds Cert of approval ISO 14001:2014). QC (n/a in this application except Microbiology safety from fungi etc by 175.300 of polymer type)	advice it is generally robust and fool-proof & can be overcoated for further resistance)
HACCP analysis of Instructions sighted Product data sheet PDS	Description (2-component polyamide adduct, cured, high solids, high build epoxy paint, it forms as hard tough coating, has good wetting properties and low temperature curing). Recommended use (self-primed, surface tolerant paint system as intermediate or finish coat in heavy duty painting with low VOC & high build. For immersed minor repair, for recoat of polyurethane topcoat), temperature, certificates, physical constants, application details, surface preparation, application conditions, preceding coat etc.	Certificates listed. Tested per 21CFR175.300 dry foodstuff & consult Hempel for details Complies European fire standard, Tested for non-contamination of grain for occupational health Great Britain, Approved for low flame spread, Complies with EC Directive 2004/42/EC subcategory j (viz limitation on emissions of volatile organics) Also Physical constants. Application details).
HACCP analysis email 7/7/2021 10:25 data submission	45880 Bureau Veritas end user steel dry cargo container interior distilled water 120F/24 hr 1.28/<18 mg/square inch n-Heptane 70F 30 mins 1.65/<18 mg/square inch. 45881 certificate similarly.	45880 -12170 grain contamination test -passed taste test and had low quantity of solvent by glc test. Also 4581 – 12170 Grain Test-NOHH for safety of grain vs solvent release from dried film. Also 4580 similarly.
HACCP analysis email 8/7/2021 14:45 data submission	Application form Hempel Mastic 45880 is a ambient temperature chemically cured 2-component epoxy coating material intended for corrosion prevention as a physical barrier. It does not contain any active ingredients or metallic pigments. It has been tested and meets FDA 175.300 & NOHH requirements attached & web address for company and ISO certificates. Find attached SDSs for part A 45889, and part B 95880. Contents sighted Product Data Sheet for 45880 (similar to PDS earlier & says polyamide cured epoxy paint and complies with EU Dir 2004/42/EC limiting VOC). Hempadur Mastic 45889 Base SDS sighted with hazard chemicals names, CAS, & % ranges. Regulatory section and HSNO HSR002669 and GHS hazard classifications). Similarly for Curing agent 95880. USFDSA extractability report as previously.	FDA Certificate for Polyurethane 55610 (This is used for Top Coat. Lloyds Cert of approval ISO 14001:2014 & sites schedules. Hempel A/S ISO 45001:2018 similarly. COT independent report 22/12/2014 for paints including HM45880 on steel panels per ISO 12944-6 C4 high vs salt spray, condensation – Conclusion -The system Hempadur Avantguard 750 1736G/ Hempadur Mastic 45880 / Hempadur HS 55610, dry film thickness 60/120, 60 micro-m (COT sample #s) applied on steel panels meets requirement of ISO 12944-6 C4 high. Similar 2nd report had the system Zinc 17360/ Hempadur Mastic 45880 / Hempadur Mastic 45880 applied on steel panels meets requirement of ISO 12944-6 C4 high Coating Epoxy to prevent any damage to Coating if required . Please note that HEMPADUR MASTIC dries to a hard finish).
Potential micro challenge countered by cleanability (partly supported by resin typeO	pH growth ranges: B cereus 4.4-9.3, Campylobacter jejuni 4.9-9.0, C botulinum A & B 4.8-8.5 type E 5-8.5, C perfringens 5-8.9, Listeria monocytogenes 4.5-8.0, Salmonella 3.8-9,	Staph aureus 4.3-9.0, vibrio cholerae 6-11, vibrio parahaemolyticus 4.8-9, vibrio vulnificus 5-10, Yersinia enterocolitica 4.4-9.6

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- **The formulation in confidence follows & is not for public circulation**
- **The ID of ingredients is n/a in this case so the appendix is removed.**

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Dear Satya Nand and Evert Hut,

Thanks for payment and find report attached for questions, suggestions for improvement.

Please find the cover letter only for your assessment report for prepayment as a new client – per an invoice to be raised by our accountant if you please contact her.

After payment - please find attached your assessment report for any question or suggestions. The web listing should follow. Please see status below in case there is information to add to suit you or the clients.

Hempel Mastic 45880

- Product description: surface coating, ambient temperature chemically cured 2-component epoxy coating material
- Product use: intended for surface coating in food areas & corrosion prevention as a physical barrier
- Status: passed new AsureQuality assessment for food / beverage / dairy factory and related use \$467.5+ GST for 2:45 hours. Hempel may add detail to claimed areas of application and experience with these.

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