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TECHNICAL DATA SHEET

S4FE-D™ Decontamination Wipes

CBRN Decontamination Surfactant • Powered by the Bind-It™ formulation

S4FE-D™ Decontamination Wipes are pre-saturated single-use wipes built on the same Bind-It™ surfactant chemistry as the rest of the S4FE-D™ product line, packaged in 80-count cylindrical canisters, 50-count flexible pouches, and individually-sealed D.I.R.T. (Decon Individual Rapid Towel) packets for spot decontamination, point-of-use cleaning, monitoring-survey followup, and incident response. The wipes are saturated at the factory with the pre-diluted working solution — the same chemistry as the Ready-to-Use Spray, just delivered on a disposable viscose substrate. The wipe format has a meaningful advantage over spray-and-wipe for rapid cleanup: the mechanical motion of wiping — the physical agitation across the contaminated surface — actively accelerates the binding and lift action of the surfactant chemistry, doing in one motion what a spray-dwell-wipe sequence does in three. Originally developed by Laboratory Technologies, Inc. as part of the Bind-It™ formulation family, the wipes are in active use at hospital nuclear medicine departments, nuclear pharmacies, research labs, and first-responder go-kits.

PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Pre-saturated disposable wipe on natural-fiber viscose substrate — soft, absorbent, biodegradable
Odor	Odorless (carrier solution)
pH (as supplied)	~6.5 (near-neutral, carrier solution)
Density at 20 °C	~1.00 g/mL (carrier solution)
Viscosity	N/A (pre-saturated wipe — carrier is water-thin)
Boiling point	100 °C (212 °F)
Flash point	Greater than 100 °C — not flammable
Water solubility	Completely miscible

COMPOSITION

S4FE-D Decontamination Wipes are saturated with the same proprietary aqueous surfactant blend used in the S4FE-D™ Ready-to-Use Spray — Bind-It™ chemistry pre-diluted at the factory. The wipe substrate is 100% viscose — a natural-fiber regenerated cellulose, soft on skin, highly absorbent, and biodegradable. The complete regulatory composition disclosure for the carrier solution is provided in the current S4FE-D Spray & Wipes Safety Data Sheet (available from LTI or at www.labtechinc.com). Specific surfactant chemistry is trade-secret protected and is not disclosed beyond what regulatory requirements mandate in the SDS.

MECHANISM OF ACTION

Conventional decontamination chemistries, such as acids, bases and oxidizers, work by reacting with or dissolving the contaminant where it sits. That approach can drive contamination into the surface microstructure (microporosity in stainless steel, the oxide layer on aluminum, the grain boundaries of plated finishes) and can create byproducts of its own. S4FE-D™ takes a different approach: the contaminant is lifted off the surface and bound into the surfactant matrix, where it stays until it is rinsed or wiped away. The contamination leaves the workpiece, ends up in the rinsate or on the wipe, and does not redeposit. The same mechanism works on chemical, biological and radiological contamination, and it is why S4FE-D™ is safe on a wide range of materials, including aluminum and plated surfaces where acid-based chemistries cause real harm.

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APPLICATION

Pre-saturated. Single-use. Pull one wipe from the canister or pouch, wipe the contaminated surface, and discard. No mixing, no spray bottle, no dwell-time timer needed for spot work — the mechanical motion of wiping actively accelerates the binding and lift action of the surfactant chemistry, doing in one pass what a spray-dwell-wipe cycle does in three. That mechanical advantage is what makes the wipe format the fastest, most effective option for rapid cleanup. The wipes are the right format for point-of-use spot decon, post-procedure cleanup, monitoring-survey followup, in-cart and in-glovebox cleanup, and any application where reaching for a spray bottle is too slow or too messy.

When to use Wipes vs Spray vs Concentrate. Three formats of the same chemistry. Reach for the Wipes for point-of-use spot decon, post-procedure cleanup, monitoring-survey followup, and incident-response kits — anywhere the speed of pulling a single wipe beats reaching for a spray bottle. Reach for the Ready-to-Use Spray when you need to apply working solution to a larger surface area without going through a stack of wipes. Switch to the Concentrate for high-volume routine cleaning, mass-decon staging, and ultrasonic bath service.

Application methods:

- **Wipe cleaning —** pull one wipe, wipe across the contaminated surface with moderate pressure. For heavily contaminated areas, use a second wipe — fresh chemistry on a fresh wipe lifts more contamination than reusing a saturated wipe. Discard used wipes under the facility's procedures for the contaminant involved.
- **Spot skin decon —** the Wipes are promoted and field-proven for occasional spot skin decontamination — for example, after lead handling, after a glove tear, after a radioisotope spill on a hand or forearm. Wipe the affected skin with the wipe; for known contamination, follow with a routine handwash using the S4FE-D™ Hand & Body Soap. The wipes are not intended as a substitute for routine personnel hand hygiene — for that, the dedicated Hand & Body Soap is the right tool.
- **Monitoring-survey followup —** when a survey meter detects loose contamination in an unexpected spot, a single wipe is often the fastest cleanup — wipe, re-survey, document. The wipe captures the contamination into the carrier-solution matrix so it does not redeposit, and the disposable format keeps the cleanup self-contained.
- **Incident-response go-kit —** the 50-count flexible pouch is sized to live in a first-responder kit, an emergency-response cart, or the supplemental kit on an iodine-131 treatment cart. The pouch format is lighter and easier to stage than the 80-count canister.

MATERIALS COMPATIBILITY

Material	Compatible	Notes
Aluminum (incl. anodized)	**Yes**	Founding-design material — S4FE-D was originally developed to be safe on aluminum surfaces.
Stainless steel	**Yes**	All grades. No pitting or etching at any working dilution.
Chrome / common platings	**Yes**	Near-neutral pH does not attack the plating layer at grain boundaries.
Brass, copper, painted metals	**Yes**	Standard surfactant compatibility.
Glass, ceramic, porcelain	**Yes**	Trivially safe.
Most plastics	**Yes**	Acrylic, polycarbonate, polyethylene, PVC, and similar.
Most rubbers	**Yes**	Standard surfactant compatibility for routine contact.
Specialty elastomers	**Verify**	Hygroscopic specialty elastomers — some silicones and polyurethanes — can absorb water from the aqueous working solution on prolonged contact and exhibit temporary swelling. The effect typically reverses on drying. For uncertain materials, conduct a 24-hour patch test on a sacrificial piece.

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Material	Compatible	Notes
Direct skin contact	**Yes**	Safe for use on skin. The wipes are gentle enough for direct skin decontamination — wiping a hand, forearm, or other exposed area after lead handling, a glove tear, or a small radioisotope spill is one of the primary use cases for the Wipes format. With repeated heavy use, like any surfactant, the wipes can draw oils from skin and cause drying. For routine personnel decontamination of skin, the dedicated S4FE-D Hand & Body Soap is the right tool. Avoid the eyes.

EFFECTIVE CONTAMINANT RANGE

S4FE-D™ Decontamination Wipes remove chemical, biological and radiological contamination. On the radiological side, they are effective across the radionuclides encountered in research, clinical, and emergency-response environments — the same range as the rest of the S4FE-D™ product line. The binding chemistry is not isotope-selective — it captures dispersed contamination regardless of nuclide identity. The categories below are representative examples, not an exhaustive list; in more than 30 years of Bind-It™ use the chemistry has performed on every isotope it has been applied to.

- **Common nuclear medicine isotopes —** Tc-99m, F-18, I-131, I-125, Ga-68, Lu-177, Co-57, and similar
- **Calibration sources —** Cs-137, Na-22, Co-60, Ba-133, and others used routinely in health-physics work
- **Actinides —** uranium, plutonium, americium, neptunium, thorium and their decay products. Binding chemistry is particularly important for actinide work, where redeposition risk on metal substrates is real and the surface microstructure can be permanently compromised by dissolving-chemistry approaches.
- **Beta emitters —** including high-energy beta emitters such as P-32, Sr-90/Y-90

STORAGE AND SHELF LIFE

Storage temperature	5 °C to 30 °C (40 °F to 85 °F) recommended. Avoid freezing and prolonged exposure to extreme temperatures.
Storage location	Cool, dry, well-ventilated. Keep containers tightly closed and labeled.
Light sensitivity	None significant under normal indoor storage.
Shelf life from manufacture	48 months (4 years) from date of manufacture
After opening	Stable for the full 48 months once opened, provided the canister lid or pouch reseal is kept closed between uses. The pre-saturated carrier solution is formulated with reverse-osmosis water, so the shelf-life caveats that apply to user-mixed working solution (tap or DI water shortening usable life) do not apply here.

DISPOSAL

Dispose of unused product in accordance with applicable federal, state and local regulations. Used wipes carry whatever contamination was removed from the workpiece, so they are handled under the facility's procedures for that contaminant, whether chemical, biological or radiological. In most cases the waste stream's classification is set by the contaminant removed, not by the S4FE-D™ chemistry.

AVAILABLE FORMATS

S-0080-C	80-count cylindrical canister — twist-lid, single-pull dispensing, sized for bench, hot lab, and cart use
S-0050-W	50-count flexible re-sealable pouch — lighter and more compact than the canister, sized for first-responder kits, treatment carts, and incident-response staging

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S-DIRT-W	D.I.R.T. (Decon Individual Rapid Towel) — single sealed packet, pocket-sized, designed to live in a first-responder pocket, a glovebox, or stage a treatment cart with one-per-patient distribution. Same viscose substrate, same chemistry, packaged for the use case where even a 50-count pouch is too big to stage where it's needed.
Bulk sizes	For high-volume use beyond what wipe formats can supply economically, switch to the S4FE-D Concentrate, which dilutes 10:1 with water and ships in 1-gallon, 5-gallon pail, 15-gallon, 55-gallon drum, and 275-gallon IBC tote formats.

For other S4FE-D formats — Concentrate, Ready-to-Use Spray, Hand & Body Soap, and pre-staged response kits — see the S4FE-D Product Family Summary or visit www.labtechinc.com.

SAFETY DATA SHEET

Hazard classification: H319, causes serious eye irritation (Eye Irritation 2A, signal word Warning). Eye protection is recommended; no special skin measures are required. Refer to the current S4FE-D Spray & Wipes Safety Data Sheet (SDS) for complete regulatory composition disclosure, hazard classification, exposure controls, transportation information, and toxicological data. The SDS is available from LTI on request — contact sales@labtechinc.com — or download from www.labtechinc.com.

This Technical Data Sheet provides general guidance on S4FE-D™ Decontamination Wipes. Specific applications should be validated by the end user against their own materials, contamination types, and procedures. LTI is available to consult on application engineering for non-standard use cases — contact sales@labtechinc.com.