Test Report 3057338-7 (7 of 10).

Model: N-TEC3000EK

Fire Extinguisher Valve Company

Introduction.

This report has been prepared by Dave Sadler and relates to the activity detailed below:

Job/Registration Details		Client Details
Job number:	**3057338**	
Job type:	Testing	Fire Extinguisher Valve Company
Start Date:	10/09/19	Unit 10, Ford Lane Business Park
Test type:	Homologation	Ford Lane
Sample ID:	N/A	Ford Nr Arundel
Registration:	**NA**	West Sussex BN18 0UZ
Protocol:	NA	United Kingdom
Quality system:	NA	

The report has been approved for issue by John Thompson – Senior Engineer

Approved For Issue	
	Issue Date: 25 October 2019

Objectives.

This is an independent test evaluation to the entirety of the below specification:

F.I.A. Standard dated 01 January 1999

Product Scope.

N-TEC3000EK – Novec Electronic Fire Extinguisher

Report Summary.

Testing was conducted on 10/09/2019.

The samples complied with the requirements of the test work conducted.
Results only:
All measured results indicated with an * are below/above the specification limit by a margin less than the measurement uncertainty.

Section 1: Test Results – Bottle burst

Section 2: Instructions/Maintenance

Section 3: MSDS – Novec 1230

Appendix: FIA Homologation (separate document)

Test Samples.

Sample Id	ER Number	Description
	N/A	N-TEC3000EK – Novec Electronic Fire Extinguisher

Description of Test Samples.

Sample Description
N-TEC3000EK – Novec Electronic Fire Extinguisher

Test Requirements.

F.I.A. Standard dated 01 January 1999

Clause	Requirements	Result
1.1	**Engine Compartment Test**	**Pass**
1.2	**Cockpit Fire Test**	**Pass**
1.3	**Rotational Test**	**Pass**

Glossary of Terms.

PASS: Complies. Tested by BSI engineers at BSI laboratories.

PASS1: Complies. Witnessed by BSI engineers in manufacturers laboratory.

PASS2: Complies. Tests carried out by third party lab; results accepted by BSI.

PASS*: Report resulted in uncertainty and states that Compliance is more probable than non-compliance.

FAIL: Non compliance – Product does not meet the requirements of this clause.

FAIL*: Report resulted in uncertainty and states that Non-compliance is more probable than compliance.

N/A: Not applicable to design under consideration.

N/T: Not tested due to similarity to previously tested item; reference earlier test report.

Conditions of Issue.

This Test Report is issued subject to the conditions stated in current issue of 'BSI Terms of Service'. The results contained herein apply only to the particular sample(s) tested and to the specific tests carried out, as detailed in this Test Report. The issuing of this Test Report does not indicate any measure of Approval, Certification, Supervision, Control or Surveillance by BSI of any product. No extract, abridgement or abstraction from a Test Report may be published or used to advertise a product without the written consent of BSI, who reserve the absolute right to agree or reject all or any of the details of any items or publicity for which consent may be sought.

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BSI
Kitemark House
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Hertfordshire
HP2 4SQ

Section 1: Test Results – Bottle Burst.

Bottle burst test

Description	Required (Bar)	Result (Bar)
N-TEC3000EK	No Requirement	115.4

Section 2 – Installation & Maintenance

N-TEC3000EK

Electronic Plumbed-In Fire Extinguisher System Installation Instructions

This is a Novec1230 - homologated gas fire extinguisher system. To maintain optimum performance all systems should be serviced every two years.

IMPORTANT Please read the following before commencing any installation.

1. These instructions should be followed during installation. Please contact us if you require any assistance during installation.
2. The components supplied should be used in accordance with the instructions and any advice we may give you. If you do not comply with the instructions or any such advice, without limitation, any warranty may be invalidated.
3. This product should be returned every 2 years from date of manufacture to FEV or an appointed service agent, for a complete check and service refill – and re-certification for a further 2 years.
4. The control box does not contain a battery; you will need to supply a 9-volt PP3 battery.
5. Do not plug the loom into the Firing Head until the firing button connections are made.
6. Do not arm your system until you have completed the battery and circuit test as indicated on the control box instructions supplied with the control box.

KIT CONTENTS

Qty	Description	Part No.	Drawing No.
1	Cylinder	N-TEC3000EK-C	1
1	Control Box	FE-CB-CE	2
1	Internal fire button with metal shroud	FE-INT-FB-MS	3
1	External fire button	FE-EXT-FB	4
7mtr	10mm Aluminium tubing	FE-ALI-10	5
2	Cockpit Nozzle with 10mm x ¼ metal Straight connector	FE-NOVEC-C-PIT-NOZ-10	8
4	Engine Nozzle with 10mm x ¼ metal swivel T	FE-NOVEC -ENG-NOZ-10 FE-M-T-CON-10X-1/4	9 10
2	Metal Tee Connector 10-10	FE-T-CON-10-M	7
2	Metal Y Connector 10mm	FE-Y-CON-10-M	6
16	Tube clips	FE-P-CLIP-M-8	
1	Large ‘E’ label	FE-E-L	
1	Small ‘E’ label	FE-E-SL	

ALTERNATIVE CONTENTS

Qty	Description	Part No.	
1	8865 Control Box	FE-CB-8865	

INSTALLATION INSTRUCTIONS

1. **BOLT** the cylinder-mounting cradle to the vehicle structure **SECURELY**.

2. Mount the electronic control box in a suitable location.

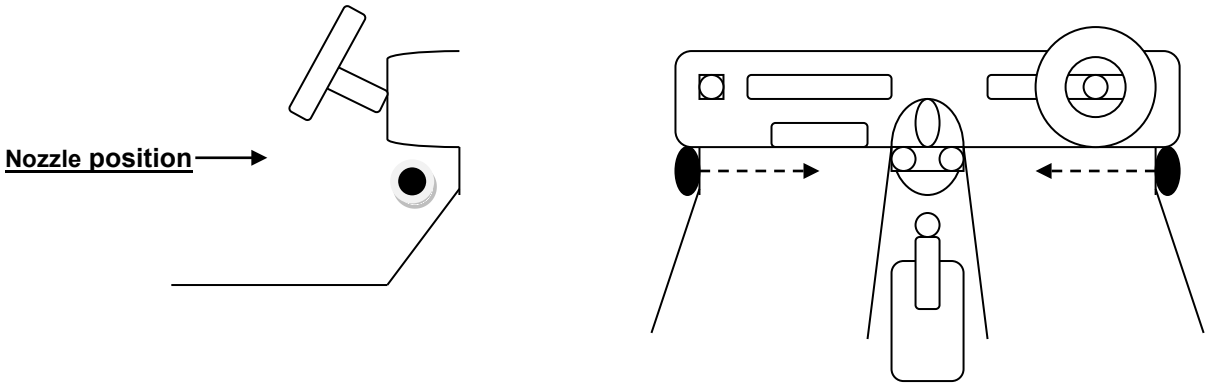
3. Mount the firing switches to enable operation in accordance with current regulations, one inside the vehicle within easy reach of the driver (and co-driver where applicable) (19.0mm diameter hole) and one on an outside panel (22.5mm diameter hole) adjacent to the electrical cut out switch. Apply the E Decal label adjacent to the external firing switch.

4. **WIRING.** Wiring harness has 2-paired cables with bared ends. (A) Firing switches 3 & 4 are connected to the black pairs of wires. Install 9V PP3 type dry battery into control box (note battery is not supplied).

5. **PLUMBING** - IMPORTANT Please note 10mm piping supplied fits into various fittings in accordance with assembly drawing number N-TEC3000EK ensure that all push in connections are secure. Note that the supply from the firing head should enter the centre branch of the Y connector and exit the two outlets of the Y connector into the two centre branches of the two T connectors the two outlets of each T connector then supply four engine nozzles and two cockpit nozzles.

Engine Nozzles should be positioned one in each corner of the engine bay. If in doubt ask your local Motorsport UK/FIA scrutineer to advise.

Cockpit Nozzles Mount two cockpit nozzles on the front door pillars pointing one into each of the footwells.



THIS IS A SAFETY ITEM! CHECK YOUR INSTALLATION CAREFULLY! IF IN DOUBT ASK!

Please Note: FEV Novec1230 systems are tested and rated for a temperature operation range of –10 to +60 degrees C in accordance with FIA regulations and technical list 16. Users should ensure that where high temperatures are anticipated adequate provision is made to locate the system away from high temperature sources (exhaust, catalyst, etc) and if necessary fit reflective insulation around the cylinder.

BEFORE EVERY EVENT CHECK SYSTEM CONTENTS, NOZZLES ARE CLEAN AND ALL CONNECTIONS ARE SECURE

F.E.V. CONTROL BOX

Fire Extinguisher Valve Co Ltd
Unit 10, Ford Lane Business Park, Ford Lane, Ford, Nr Arundel, West Sussex, BN18 0UZ,
Tel + 44 (0) 1243 55 55 66 Fax + 44 (0) 1243 555 660

INSTRUCTIONS

The Control Box is supplied with 3 cables. One of these is terminated with a 2-pin plug for connection to the electrical firing head. The other 2 cables are not terminated and are for connection to the External and Internal firing Button Switches. Either cable can be connected to either type of switch.

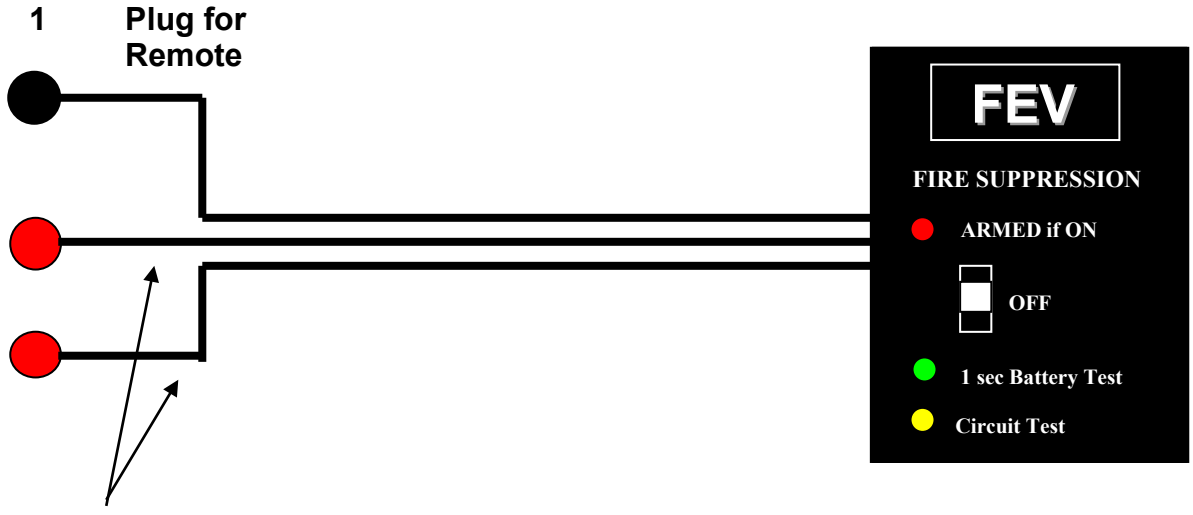
Setting Up The System

On the control box a 3-position switch selects the function with centre being OFF.
The up position is TEST and down position ARM.

Switch to the test position.
Observe that the GREEN LED comes ON for about 1 second and then goes OFF. This signifies a good battery, if the GREEN LED fails to come ON then the PP3 battery must be exchanged for a new one.
At the same time the YELLOW LED should be ON. If the FIRE BUTTON is now pressed the yellow led will go OFF signifying a good circuit.

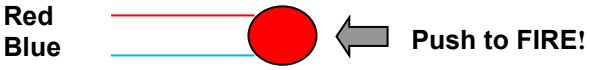
Switch to the Armed Position

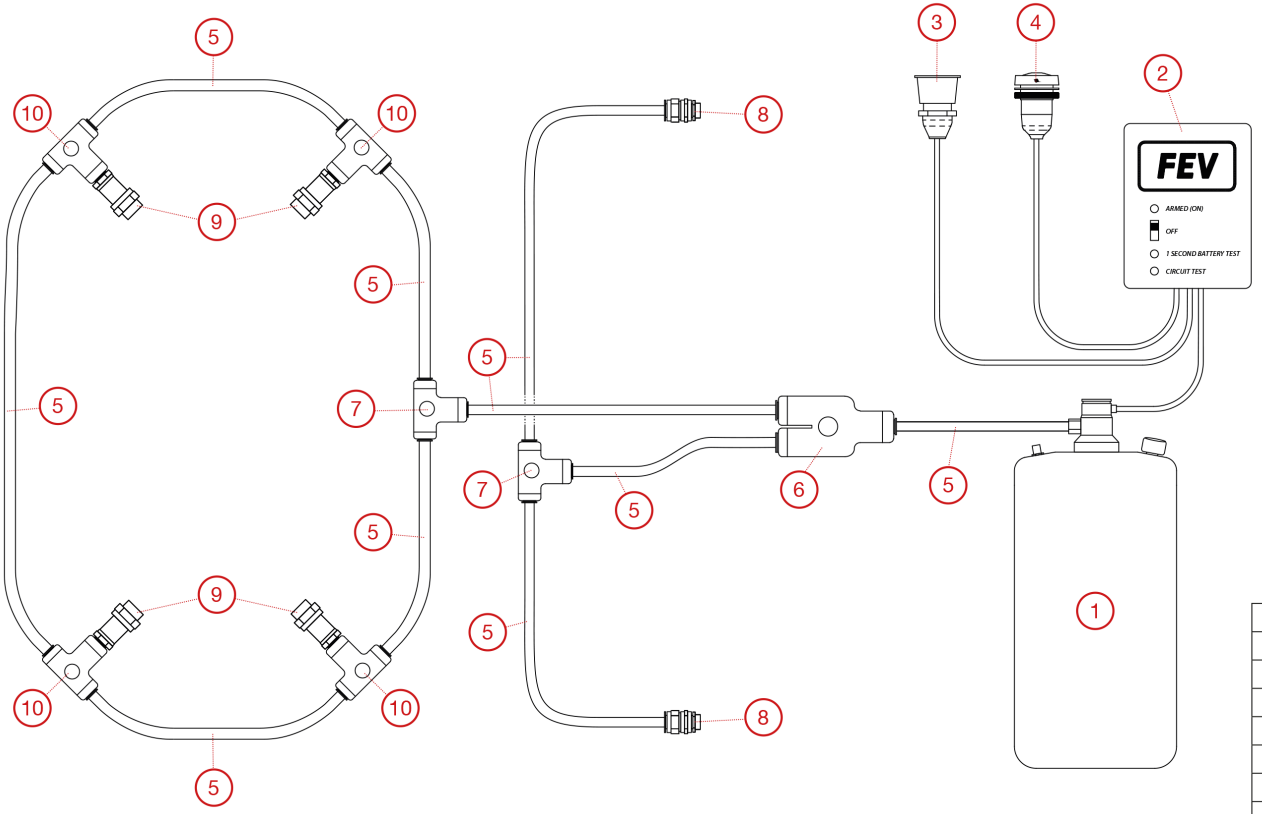
In the armed position and if the system is ready then the RED LED will be ON. If either the wiring or firing detonator is faulty or the detonator is either not there or has already fired, then the LED will not light. There are two 1.2 Metre cables coming from the unit, either or both should be connected to firing push button switches of the users choice. Making the circuit between the two wires within the cable, coloured red and blue WILL cause the extinguisher to FIRE.



Wires for Two Fire! Buttons

Fit a single pole push button on each wire, (Red and Blue conductors).
If only one button is required then cut back and ensure red and blue conductors are isolated





Item	Part Number	Qty
1	EK CYLINDER	1
2	FE-CB-CE (carbon effect)	1
3	FE-INT-FB-MS	1
4	FE-EXT-FB	1
5	FE-ALI-10	
6	FE-Y-CON-10-M	1
7	FE-T-CON-10-M	2
8	FE-NOVEC-C-PIT-NOZ-10	2
9	FE-NOVEC-ENG-NOZ-10	4
10	FE-M-T-CON-10X-1/4	4

FIRE SUPPRESSION

Fire Extinguisher Valve Co
Unit 10, Ford Lane Business Park
Ford, Nr Arundel, West Sussex
Tel: 01243 555566 | Fax: 01243 555660
www.f-e-v.co.uk

CYLINDER INSTALLED IN REAR

THIRD ANGLE PROJECTION

A4

TITLE
ASSEMBLY ELECTRICAL SYSTEM

DRAWING NO: N-TEC3000EK

Section 3 – MSDS Novec 1230.

Safety Data Sheet

Document Group:	16-3425-2	**Version Number:**	29.01
Issue Date:	07/25/18	**Supercedes Date:**	02/16/18

SECTION 1: Identification

1.1. Product identifier
3M™ Novec ™ 1230 Fire Protection Fluid

Product Identification Numbers
98-0212-3203-2, 98-0212-3217-2, 98-0212-3414-5

1.2. Recommended use and restrictions on use

Recommended use
Streaming and Flooding Fire Protection

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Electronics Materials Solutions Division
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number
1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

2.1. Hazard classification
Not classified as hazardous according to OSHA Hazard Communication Standard, 29 CFR 1910.1200.

2.2. Label elements
Signal word
Not applicable.

Symbols
Not applicable.

Pictograms
Not applicable.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	> 99.5

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you are concerned, get medical advice.

Skin Contact:
Wash with soap and water. If signs/symptoms develop, get medical attention.

Eye Contact:
Flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. If signs/symptoms persist, get medical attention.

If Swallowed:
No need for first aid is anticipated.

4.2. Most important symptoms and effects, both acute and delayed
See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
Material will not burn. Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture
Exposure to extreme heat can give rise to thermal decomposition.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion
Toxic Vapor/Gas	During Combustion

5.3. Special protective actions for fire-fighters
When fire fighting conditions are severe and total thermal decomposition of the product is possible, wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a closed container approved for transportation by appropriate authorities. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
Contents may be under pressure, open carefully. Do not breathe thermal decomposition products. For industrial or professional use only. Do not use in a confined area with minimal air exchange. Avoid release to the environment.

7.2. Conditions for safe storage including any incompatibilities
Protect from sunlight. Store in a well-ventilated place. Store at temperatures not exceeding 38C/100F Store away from strong bases. Store away from other materials. Store away from amines.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	756-13-8	Manufacturer determined	TWA:150 ppm(1940 mg/m3)	

ACGIH : American Conference of Governmental Industrial Hygienists
AIHA : American Industrial Hygiene Association
CMRG : Chemical Manufacturer's Recommended Guidelines
OSHA : United States Department of Labor - Occupational Safety and Health Administration
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
Provide appropriate local exhaust when product is heated. For those situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation sufficient to maintain levels of thermal decomposition products below their exposure guidelines. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Eye protection not required.

Skin/hand protection

No chemical protective gloves are required.

Respiratory protection

If thermal degradation products are expected, use a full facepiece supplied-air respirator.
If thermal decomposition occurs:

Use a positive pressure supplied-air respirator if there is a potential for over exposure from an uncontrolled release, exposure levels are not known, or under any other circumstances where air-purifying respirators may not provide adequate protection.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:	Liquid
Specific Physical Form:	Liquid
Odor, Color, Grade:	Clear colorless liquid with low odor
Odor threshold	*No Data Available*
pH	*Not Applicable*
Melting point	-108 °C
Boiling Point	49 °C [@ 760 mmHg]
Flash Point	No flash point
Evaporation rate	> 1 [*Ref Std:*BUOAC=1]
Flammability (solid, gas)	Not Applicable
Flammable Limits(LEL)	None detected
Flammable Limits(UEL)	None detected
Vapor Pressure	40.4 kPa [@ 25 °C]
Vapor Density	11.6 [*Ref Std:*AIR=1]
Density	1.6 g/ml
Specific Gravity	1.6 [@ 68 °F] [*Ref Std:*WATER=1]
Solubility in Water	Nil
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*No Data Available*
Autoignition temperature	*Not Applicable*
Decomposition temperature	*No Data Available*
Viscosity	0.6 centipoise [@ 25 °C]
Molecular weight	*No Data Available*
Volatile Organic Compounds	1600 g/l [*Test Method:*calculated SCAQMD rule 443.1]
Percent volatile	100 %
VOC Less H2O & Exempt Solvents	1600 g/l [*Test Method:*calculated SCAQMD rule 443.1]

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Light

10.5. Incompatible materials
Strong bases
Amines
Alcohols

10.6. Hazardous decomposition products

Substance	Condition
Hydrogen Fluoride	At Elevated Temperatures - extreme conditions of heat

Refer to section 5.2 for hazardous decomposition products during combustion.

If the product is exposed to extreme condition of heat from misuse or equipment failure, toxic decomposition products that include hydrogen fluoride and perfluoroisobutylene can occur. Extreme heat arising from situations such as misuse or equipment failure can generate hydrogen fluoride as a decomposition product.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
No known health effects.

Skin Contact:
Contact with the skin during product use is not expected to result in significant irritation.

Eye Contact:
Contact with the eyes during product use is not expected to result in significant irritation.

Ingestion:
No known health effects.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Dermal	Professional judgement	LD50 estimated to be > 5,000 mg/kg
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Ingestion	Professional	LD50 estimated to be > 5,000 mg/kg

		judgement	
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation-Vapor (4 hours)	Rat	LC50 > 1,227 mg/l

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Rabbit	No significant irritation

Serious Eye Damage/Irritation

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Rabbit	No significant irritation

Skin Sensitization

Name	Species	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Guinea pig	Not classified

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	In Vitro	Not mutagenic
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	In vivo	Not mutagenic

Carcinogenicity

For the component/components, either no data are currently available or the data are not sufficient for classification.

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not classified for female reproduction	Rat	NOAEL 3,000 ppm	premating & during gestation
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not classified for male reproduction	Rat	NOAEL 3,000 ppm	premating & during gestation
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	Not classified for development	Rat	NOAEL 3,000 ppm	premating & during gestation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	nervous system	Not classified	Rat	NOAEL 100,000 ppm	2 hours
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-	Inhalation	cardiac sensitization	Not classified	Dog	Sensitization Negative	17 minutes

pentanone						

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
1,1,1,2,2,4,5,5,5-Nonafluoro-4-(trifluoromethyl)-3-pentanone	Inhalation	liver | kidney and/or bladder | heart | endocrine system | hematopoietic system | muscles | nervous system | respiratory system | vascular system	Not classified	Rat	NOAEL 3,000 ppm	90 days

Aspiration Hazard
For the component/components, either no data are currently available or the data are not sufficient for classification.

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations

13.1. Disposal methods
Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Dispose of waste product in a permitted industrial waste facility. As a disposal alternative, incinerate in a permitted waste incineration facility. Combustion products will include HF. Facility must be capable of handling halogenated materials. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): Not regulated

SECTION 14: Transport Information

For Transport Information, please visit http://3M.com/Transportinfo or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information

15.1. US Federal Regulations
Contact 3M for more information.

EPCRA 311/312 Hazard Classifications:

Physical Hazards
Not applicable

Health Hazards
Not applicable

15.2. State Regulations
Contact 3M for more information.

15.3. Chemical Inventories
The components of this product are in compliance with the new substance notification requirements of CEPA.

The components of this material are in compliance with the China "Measures on Environmental Management of New Chemical Substance". Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of the Korean Toxic Chemical Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Japan Chemical Substance Control Law. Certain restrictions may apply. Contact the selling division for additional information.

The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information.

The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

Contact 3M for more information.

15.4. International Regulations
Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification
Health: 3 **Flammability:** 0 **Instability:** 1 **Special Hazards:** None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.
The NFPA Health code of 3 is due to emergency situations where the material may thermally decompose and release Hydrogen Fluoride. During normal use conditions, please reference Section 2 and Section 11 of the SDS for additional health hazard information.

HMIS Hazard Classification
Health: 1 **Flammability:** 0 **Physical Hazard:** 1 **Personal Protection:** X - See PPE section.

Hazardous Material Identification System (HMIS® IV) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® IV ratings are to be used with a fully implemented HMIS® IV

program. HMIS® is a registered mark of the American Coatings Association (ACA).

Document Group:	16-3425-2	**Version Number:**	29.01
Issue Date:	07/25/18	**Supercedes Date:**	02/16/18

Reason for Reissue
Conversion to GHS format SDS.

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*****End of Report*****