FDA U.S. FOOD & DRUG ADMINISTRATION

Technical Project Lead (TPL) Review of MRTPAs

MRTPAs[1] Subject to this Review[2]	
STNs	MR0000268.PD1 – MR0000268.PD20, see Appendix A
Common Attributes	
Submit date	April 5, 2024
Receipt date	April 5, 2024
Applicant	Swedish Match USA, Inc.
Product manufacturer	Swedish Match North America LLC, Swedish Match North Europe AB
Application type	Standard
Order Under 911(g)	☒ Risk Modification 911(g)(1) order ☐ Exposure Modification 911(g)(2) order
Product category	Other[3]
Product subcategory	Other[4]
Modified Risk Claim(s)	Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.
Cross-Referenced Submission(s)	
All STNs	(b) (4), MR0000020 – MR0000022, MR0000024, MR0000025, MR0000027 – MR0000029, MR0000256.PD1 – MR0000256.PD5, MR0000256.PD7 – MR0000256.PD9, PM0000010 – PM0000017, PM0000593.PD1 – PM0000612.PD1
Recommendation	
Issue modified risk granted orders for the products subject of this review.	

Technical Project Lead (TPL):

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Date: 2026.06.29 15:10:39 -04'00'

Cindy Chang, Ph.D., M.P.H.
Branch Chief
Division of Population Health Science

Signatory Decision: Concur with TPL recommendation and basis of recommendation

Digitally signed by Benjamin Apelberg -S
Date: 2026.06.30 06:36:56 -04'00'

Benjamin Apelberg, Ph.D., M.H.S.
Deputy Director
Office of Science

[1] Modified Risk Tobacco Product Applications.
[2] Product details, amendments, and dates provided in the Appendix. STN means submission tracking number including product static identification number (PD), if applicable.
[3] Oral pouch products containing nicotine derived from tobacco.
[4] The applicant uses the term "flavors" or "varieties" to indicate product flavors.

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1. EXECUTIVE SUMMARY

On April 5, 2024, Swedish Match USA, Inc. submitted modified risk tobacco product applications (MRTPAs) for MR0000268.PD1 – MR0000268.PD20 requesting authorization under section 911(g)(1) of the Federal Food, Drug, and Cosmetic Act (FD&C Act) to market the 20 products specified in Appendix A with the following risk modification claim:

- Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.

Under section 910 of the FD&C Act, the applicant requested authorization to market the 20 ZYN products (PM0000593.PD1 – PM0000612.PD1 (March 4, 2020)) without modified risk claims. FDA authorized the marketing of the new products without modified risk claims on January 16, 2025. The technical project lead (TPL) review for these premarket tobacco product applications (PMTAs) provides detail on the engineering, chemistry, stability, and manufacturing of the products, including the results of FDA inspections of manufacturing sites (PM0000593.PD1 – PM0000612.PD1).[5] Where relevant, the present review reflects determinations made in the 2025 ZYN PMTA TPL review.

In order for FDA to issue a modified risk order under section 911(g)(1) of the FD&C Act, the applicant must demonstrate that the proposed modified risk tobacco product (MRTP), as it is actually used by consumers, will:

- Significantly reduce harm and the risk of tobacco-related disease to individual tobacco users; and
- Benefit the health of the population as a whole taking into account both users of tobacco products and persons who do not currently use tobacco products.

In accordance with Section 911(g)(4) of the FD&C Act, in evaluating the benefit to health of individuals and of the population as a whole under section 911(g)(1), FDA must take into account:

- The relative health risks to individuals of the proposed MRTPs that are the subject of these applications;
- The increased or decreased likelihood that existing tobacco product users who would otherwise stop using such products will switch to using the proposed MRTPs that are the subject of these applications;
- The increased or decreased likelihood that persons who do not use tobacco products will start using the proposed MRTPs that are the subject of these applications;
- The risks and benefits to persons from the use of the proposed MRTPs that are the subject of these applications compared to the use of smoking cessation drug or device products approved by FDA to treat nicotine dependence; and
- Comments, data, and information submitted to FDA by interested persons.

Furthermore, FDA shall ensure that the advertising or labeling of the MRTP enable the public to comprehend the information concerning modified risk and to understand the relative significance of such information in the context of total health and in relation to all of the tobacco-related diseases and health conditions (section 911(h)(1) of the FD&C Act).

[5] TPL reviews and related materials for PMTAs referenced in this review are available at: https://www.accessdata.fda.gov/scripts/searchtobacco/

To determine whether the statutory standards above have been met, this review focused on the (1) scientific accuracy of the proposed modified risk claims, (2) relative health risks of the proposed MRTPs to individual tobacco users, (3) consumer understanding and perception of the proposed MRTPs marketed with the proposed claim, and (4) the potential impact to the population, including tobacco users and nonusers, from marketing the products with the proposed modified risk claim.

I conducted a thorough scientific review of the information contained in the MRTPAs and considered the recommendations from the Tobacco Products Scientific Advisory Committee (TPSAC); comments, data, and information submitted to FDA by interested persons; and other scientific information identified by the Agency from other sources.

After examining the totality of evidence across scientific reviews, as TPL, I conclude that the applicant **has demonstrated** that, as actually used by consumers, the products sold or distributed with the proposed modified risk information meet the standard under section 911(g)(1) of the FD&C Act, including that they will significantly reduce harm and the risk of tobacco-related disease to individual tobacco users and benefit the health of the population as a whole, taking into account both users of tobacco products and persons who do not currently use tobacco products. Therefore, as TPL, I recommend a Modified Risk Granted Order (MRGO) be issued to Swedish Match USA, Inc. for ZYN Cool Mint 3 mg, ZYN Cool Mint 6 mg, ZYN Peppermint 3 mg, ZYN Peppermint 6 mg, ZYN Spearmint 3 mg, ZYN Spearmint 6 mg, ZYN Wintergreen 3 mg, ZYN Wintergreen 6 mg, ZYN Citrus 3 mg, ZYN Citrus 6 mg, ZYN Coffee 3 mg, ZYN Coffee 6 mg, ZYN Cinnamon 3 mg, ZYN Cinnamon 6 mg, ZYN Smooth 3 mg, ZYN Smooth 6 mg, ZYN Chill 3 mg, ZYN Chill 6 mg, ZYN Menthol 3 mg, ZYN Menthol 6 mg (MR0000268.PD1 – MR0000268.PD20, respectively) subject to the postmarket requirements listed in the appendices of the MRGO letter.

The claim “Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis" has been demonstrated to be scientifically accurate. As described in the aforementioned 2025 ZYN PMTA TPL review, the majority of the 42 harmful and potentially harmful constituents (HPHCs) reported for the proposed MRTPs are below the lower limits of quantification, and all testing methods used to measure HPHCs were validated and determined to be fit-for-purpose. The substantially lower HPHC content in the proposed MRTPs, as stated in the 2025 ZYN PMTA TPL review, means that current tobacco product users who switch completely to the proposed MRTPs are likely to experience a reduction in individual health risk, relative to both cigarettes and smokeless tobacco products. The epidemiology review concluded that the applicant’s biomarker study (SM22-03) submitted as part of these MRTPAs demonstrated that people who used Swedish Match branded nicotine pouches had biomarker profiles similar to those of non-users of any tobacco products and are consistently lower than those observed in combusted cigarette (CC) smokers. The applicant states that the long-term epidemiological evidence for Swedish snus, as described in the cross-referenced General Snus MRTPAs (MR0000020-22, MR0000024-25, MR0000027-29 (October 22, 2019))[6] can be bridged to the proposed MRTPs, given similarities in product characteristics and use topography. As TPL, I agree with the applicant’s rationale. Thus, the applicant has demonstrated that compared to CC, the proposed MRTPs pose lower risks of the health conditions listed in the proposed claim.

[6] TPL reviews and related materials for MRTPAs referenced in this review are available at: https://www.fda.gov/tobacco-products/advertising-and-promotion/modified-risk-granted-orders

The available scientific evidence supports that, as actually used by consumers, the 20 proposed MRTPs will benefit the health of the population as a whole. In addition to the potential individual health benefits discussed above, estimates of complete switching observed in the applicant's Patterns of Use Study suggest that some adults who smoked CCs and used ZYN at baseline did stop smoking CCs (2025 ZYN PMTA TPL review). Notably, complete switching was observed, even in absence of claims communicating lower risks of the products. Additionally, a study using 2022-2023 Tobacco Use Supplement to the Current Population Survey (TUS-CPS) data found that, among adults who had ever used nicotine pouches, use among adults who had never previously used any tobacco was rare[7] (Delnevo et al., 2025). This suggests that, among adults, nicotine pouches are not typically a product of tobacco use initiation. As further discussed in Section 3.4.2, current data suggests that youth use of nicotine pouches remains relatively low. As TPL, I considered these potential benefits to adult tobacco users alongside potential risks, particularly the likelihood that people who do not use tobacco products, including youth, could start using the proposed MRTPs, and concluded that the risk to youth and non-users is outweighed by the potential benefit to adults who use more harmful tobacco products and completely switch to these products.

Additionally, evidence from the applicant's new perceptions and likelihood of use study submitted in the MRTPAs shows that, after viewing the claim, consumers understand that ZYN poses lower risks of the health conditions specified in the modified risk claim than smoking CCs, while also understanding that the products still pose health risks. Importantly, the cited evidence from the Perceptions and Behavioral Intentions (PBI) study included in the General Snus MRTPAs (authorized in 2019) shows that consumers understand that the language "instead of" in the claim indicates one must use the product exclusively to reduce one's risk of the health conditions specified in the modified risk claim.

Overall, the current scientific evidence supports that, as actually used by consumers, the 20 proposed MRTPs will benefit the health of the population as a whole. Section 911(h)(4) of the FD&C Act requires an MRTP order to be valid for a specified period of time. FDA makes order length determinations based on level of certainty pertaining to individual health risks, patterns of youth use over time, and robustness of behavioral evidence supporting adult benefit. Given these and other factors, including that these would be the first MRTP authorizations for the 20 ZYN products issued by the Agency, I recommend authorization for a period of five years. A five-year period provides a sufficient amount of time for trends in use behavior to emerge and be evaluated in postmarket surveillance and studies (PMSS), informing a determination of whether the standard in section 911(g)(1) continues to be met and whether the order should be renewed. As TPL, I recommend that the MRGOs include the marketing requirements and recommendations in sections 3.6 and 4.3 of this review to help mitigate any potential risk to youth posed by marketing these proposed MRTPs with the modified risk claim. Although this review has found that marketing the proposed MRTPs with the modified risk claim will benefit the health of the population as a whole, that determination may change over time as a function of how the products are actually used by consumers. Therefore, monitoring use of the 20 ZYN products that are the subject of these applications in terms of uptake, dual use, and complete switching as well as understanding of the modified risk claim among those who use the proposed MRTPs is required. As described below, PMSS must include, among other things, an assessment of MRTP users' behavior and understanding at multiple time points (see Appendix C in the order letter for requirements to be conveyed to the applicant).

[7] Unweighted estimate: 1.8% (unpublished; calculated by FDA)

2. BACKGROUND

2.1. PROPOSED MODIFIED RISK TOBACCO PRODUCTS

The applicant submitted information for the 20 proposed MRTPs listed on the cover page and discussed in more detail in Appendix A, sold under the brand name ZYN. The applicant describes the proposed MRTPs as 400 mg sealed pouches containing tobacco-derived nicotine in a salt formulation, along with flavor ingredients, an artificial sweetener, stabilizers, fillers, and pH adjusters, and without any whole, cut, or ground tobacco. The proposed MRTPs come in 10 characterizing flavors (cool mint, peppermint, spearmint, wintergreen, citrus, coffee, cinnamon, smooth, chill, and menthol) and two nicotine levels (3 mg and 6 mg).

2.2. PROPOSED MODIFIED RISK CLAIM

The applicant has requested a risk modification order under section 911(g)(1) of the FD&C Act to market products specified in Appendix A for the following claim:

- Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.

2.3. REGULATORY ACTIVITY

On April 5, 2024, FDA received 20 MRTPAs from Swedish Match USA Inc. for the following products: ZYN Cool Mint 3 mg, ZYN Cool Mint 6 mg, ZYN Peppermint 3 mg, ZYN Peppermint 6 mg, ZYN Spearmint 3 mg, ZYN Spearmint 6 mg, ZYN Wintergreen 3 mg, ZYN Wintergreen 6 mg, ZYN Citrus 3 mg, ZYN Citrus 6 mg, ZYN Coffee 3 mg, ZYN Coffee 6 mg, ZYN Cinnamon 3 mg, ZYN Cinnamon 6 mg, ZYN Smooth 3 mg, ZYN Smooth 6 mg, ZYN Chill 3 mg, ZYN Chill 6 mg, ZYN Menthol 3 mg, and ZYN Menthol 6 mg (MR0000268.PD1 – MR0000268.PD20, respectively).

FDA completed an Acceptance review[8] on February 12, 2025 and issued an Acceptance letter to the applicant on February 14, 2025. On February 27, 2025, FDA completed a Regulatory review,[9] which identified the inadvertent omission of Appendix B from the Acceptance letter. Based on this finding, FDA issued a Correction letter to the applicant on February 28, 2025. FDA completed a Filing review[10] on June 9, 2025, and issued a Filing letter to the applicant on June 17, 2025.

Refer to Appendix B for a complete list of amendments and additional submissions received by FDA.

2.4. SCOPE OF REVIEW

This review captures all compliance and scientific reviews completed for the products that are the subject of this review.

[8] Acceptance review was completed by Tamirra Glover.
[9] Regulatory review was completed by Tamirra Glover.
[10] Filing review was completed by Melanie Proctor and Cindy Chang.

Table 1. Disciplines reviewed

Discipline	Reviewer	Review Date
Engineering	Michele Darbeau	6/25/2026
Chemistry	Ling Zhang	6/25/2026
Microbiology	La'Chia Harrison	6/25/2026
Toxicology	Reema Goel	6/25/2026
Behavioral and Clinical Pharmacology	David Thorn	6/25/2026
Medical	Vy Nguyen	6/25/2026
Epidemiology	MoNique Gaines-Harris	6/25/2026
Social Science	Amanda Fidalgo, Apoorva Rajan-Sharma	6/25/2026
Environmental Science	Dilip Venugopal	6/25/2026
OCE – BIMO	Arnon Samuel	6/25/2026
OCE – Manufacturing/Lab	Mykeshia McNorton	6/25/2026
OCE – DPAL	Caroline Strotman	6/25/2026

Table 2. Consultations

Discipline or Office	Reviewer	Review Date
OHCE	Emily Talbert	6/23/2026

2.5. TOBACCO PRODUCTS SCIENTIFIC ADVISORY COMMITTEE (TPSAC)

Pursuant to section 911(f) of the FD&C Act, FDA referred the MRTPAs to TPSAC, and TPSAC reported its recommendations on the applications during an open public committee meeting held on January 22, 2026. At the meeting, the committee discussed the MRTPAs, including the adequacy of the scientific evidence to support marketing the products with the proposed modified risk claim. Information about the meeting, including the complete transcript, is available at: 2026 TPSAC Meeting Materials and Information | FDA.

FDA shared its preliminary assessment of the applications with the committee, focusing on the scientific accuracy of the proposed modified risk claim, product use behavior, and consumer understanding and perceptions of the proposed modified risk claim. TPSAC was asked to discuss whether the proposed modified risk claim is substantiated by the applicant's submitted scientific information. TPSAC members were also asked to discuss the evidence, if the proposed MRTPs are marketed with the proposed claim, regarding the likelihood that people who currently use CCs will completely switch to the proposed MRTPs and/or will dual use the proposed MRTPs and CCs long-term. Finally, they were asked to discuss the evidence, if the proposed MRTPs are marketed with the proposed claim, regarding the likelihood that persons who do not use tobacco products will start using the proposed MRTPs.

A summary of TPSAC's discussions on these topics is presented here. FDA's assessment of these discussions is included in the relevant portions of section 3 of this review as well as in individual discipline reviews. Overall, the TPSAC members did not identify new evidence that would inform FDA's assessment regarding health risks, consumer understanding and perceptions, or likelihood

of use of the proposed MRTPs among both people who currently use and those that do not use tobacco.

Regarding health effects associated with the proposed MRTPs, TPSAC members generally agreed that risks of the proposed MRTP use are lower than those of CC smoking and that the evidence supports the proposed claim. One member pointed out potential health risks of these ZYN and other oral nicotine products, including health effects not included in the modified risk claim, such as oral lesions, pregnancy-related risks and risks to people with existing cardiovascular disease. Health effects associated with the proposed MRTPs are discussed in more detail in the epidemiology and medical reviews, as well as Section 3.2 of this review. FDA previously assessed the evidence related to oral lesions for Swedish snus (the product which the applicant bridged to the proposed MRTPs, providing rationale that I as TPL agree with) and found that malignant transformation of oral lesions is generally uncommon. Additionally, as discussed in section 3.2.1 of this review, the proposed MRTPs do not contain detectable levels of N'-Nitrosonornicotine (NNN), the potent carcinogen strongly linked to oral cancer (Balbo et al., 2013). It is important to note that there may be risks associated with the proposed MRTP use compared with never tobacco use, but the proposed claim is comparing the relative health risks of using the proposed MRTP with that of CC smoking. As TPL, I agree with the TPSAC members' overall assessment that the risks of using these MRTPs are lower than the risks of using CCs for the health outcomes referenced in the claim. Additional discussion of health effects of the proposed MRTPs, and the PMSS necessary to monitor potential health effects, are included in more detail in sections 3.2 and 3.6 of this review.

Regarding consumer understanding of the proposed claim and consumer perceptions of the proposed MRTPs, TPSAC members agreed that, based on the information provided, consumers generally understood that the proposed MRTPs pose health risks and that the proposed claim does not appear to lead them to believe that the products are risk-free. However, the committee also noted that there was minimal evidence about the claim's impact on consumer perceptions of the relative risk of the proposed MRTPs compared to CCs. I note that the applicant's perceptions and likelihood of use study found that consumers appeared to understand that the proposed MRTPs confer less risk than CCs, with point estimates indicating that those who saw the proposed claim attributed lower risk of the proposed MRTPs relative to CCs than those who did not see the proposed claim. Consumer understanding and risk perceptions are reviewed in more detail in section 3.3 of this review.

Regarding the likelihood that CC users will completely switch to the proposed MRTPs and/or will dual-use the proposed MRTPs and CCs in the longer term, TPSAC members noted that the available evidence suggests that the proposed claim will have minimal impact on CC user behavior. Additionally, they acknowledged that the proposed claim's impact on CC users will largely depend on the applicant's marketing practices and use the proposed claim in that marketing. They noted the importance of using marketing channels and practices that will reach adult CC users, particularly older adults, while avoiding channels that will expose the product to youth and adults who do not use tobacco products. In the 2025 ZYN PMTA TPL review, FDA evaluated the applicant's Patterns of Use Study and cross-sectional data and found evidence suggestive of complete switching from CCs among some ZYN users. I note that the applicant's perceptions and likelihood of use study showed that the proposed claim had no impact on the intentions of current tobacco users, including current CC users, to use the proposed MRTPs. However, I also note the possibility, as raised by TPSAC members, that the claim provides

important information about the relative risk of these ZYN products that could help CC users make informed choices that could improve their health outcomes. Marketing with the proposed claim in a wide variety of channels that effectively reach the intended adult tobacco-using audience (and not youth or nonusers) is expected to increase their exposure to accurate relative risk information. Actual use and likelihood of use of the proposed MRTPs among tobacco users are reviewed in more detail in section 3.4 of this review.

Regarding the likelihood that nonusers will start using the proposed MRTPs if marketed with the proposed claim, TPSAC members noted the lack of information about the claim's impact on youth and the need for more recent data on youth nicotine pouch use, including 2025 National Youth Tobacco Survey (NYTS) data. Most TPSAC members acknowledged that the claim is currently not expected to significantly affect future youth use. Instead, they noted that increases in youth nicotine pouch use are likely driven by marketing practices, social media, and cultural forces. A few members noted the claim could have an additive effect on marketing measures, potentially accelerating the increase in youth use of these products. Some committee members also raised concerns about consumer beliefs that nicotine has potential cognitive benefits (e.g., increased concentration), referencing a statement from a tobacco company executive on this topic. A few members raised concerns that belief in the cognitive benefits of nicotine could lead nonusers to initiate use. I note that, while use of nicotine pouches among youth has increased since 2021 and ZYN is the most commonly used brand, youth use of nicotine pouches remains relatively low, with 1.7% of middle and high school students reporting current use according to 2025 NYTS data (Park-Lee et al., 2026). I agree with committee members that the claim is currently not expected to be a major driver of youth use of the proposed MRTPs, but I also acknowledge that modified risk claims may reduce youth and young adult harm perceptions, which could increase youth or young adult use of these proposed MRTPs. For this reason, if an MRGO is granted, I recommend marketing restrictions to limit exposure to labels, labeling, and advertising (LLA) containing the proposed claim by youth and young adults under the minimum age of sale. Actual use and likelihood of use of the proposed MRTPs among non-users, including youth, are reviewed in more detail in section 3.4 of this review.

2.6. PUBLIC AVAILABILITY OF MRTPAS

Pursuant to section 911(e) of the FD&C Act, FDA made the MRTPAs available to the public (excluding matters in the applications that are trade secrets or are otherwise confidential commercial information). Public comments on the applications (including amendments) are discussed in the individual discipline and TPL reviews. The docket for public comment was open from June 18, 2025 to March 4, 2026. FDA received 178 public comments from individuals, academia, and other organizations.

The comments included concerns about the applicability of General Snus epidemiological studies to the health risks of the proposed MRTPs, consumer perception information/studies, critiques of the applicant's studies and interpretation of findings, concerns about potential appeal to youth and addiction, concerns about marketing and advertising strategies, concerns about accidental nicotine pouch ingestion among young children, advocacy concerns, and legal/statutory interpretations. FDA considered all substantive comments when making its determination.

The comments express concern that the studies regarding the individual and population health risks of Swedish snus are not relevant to the proposed MRTPs. As noted in the toxicology review, snus and nicotine pouches are intended to deliver constituents through the same route of exposure (i.e., buccal exposure). Notably, Swedish snus and the proposed MRTPs also share similarities such as product characteristics, including low HPHC quantities, user population, and use topography. The rationale for bridging between Swedish snus and the proposed MRTPs is discussed in this review (see section 3.2.3. Relative Individual Health Risks to Tobacco Users) as well as in the epidemiology review. The products subject to this MRTPA are thus comparable from a toxicological, medical, and epidemiological perspective.

Several comments raised concerns regarding pediatric nicotine pouch ingestions among children younger than age 6, citing a study (Olivas et al., 2025) finding a significant rise involving newer nicotine pouch products in recent years. This study found that increases in pediatric nicotine exposures correspond with increased market share and availability of the proposed MRTPs (Olivas et al., 2025). This study and other adverse experiences associated with nicotine pouches are discussed in the medical review and in section 3.2.2.2.1. of this review. Surveillance and monitoring of AEs, including pediatric cases, is standard practice for authorized MRTPs.

Several comments raised concerns about rising nicotine pouch use generally, and increases in use of the proposed MRTPs specifically, among youth and young adults and a concern that the proposed claim and marketing could accelerate these trends. Youth prevalence and use patterns are addressed in the epidemiology review and in section 3.4 of this review. Nationally representative surveys of tobacco use among youth suggest that youth use of nicotine pouches is relatively low and has remained stable from 2024 to 2025. The social science review noted that existing literature suggests the claim is not expected to have a direct impact on youth intentions to use the proposed MRTPs, but that it may have an indirect impact on likelihood of initiation by lowering youth risk perceptions of the product. If authorized, marketing restrictions and reporting requirements as well as post-market surveillance requirements to track youth exposure and use will be described in the authorization letter.

Comments expressed concerns that the proposed MRTPs are being marketed to young people through advertising methods known to be appealing to youth, such as ads emphasizing flavors, viral social media promotion, partnerships with Formula 1 racing, rewards programs, and event sponsorships. These concerns are discussed in the OHCE consult, as well as Section 3.5 of this review, which notes the applicant's use of sponsorships and events, advertising themes that may be appealing to youth and young adults, and brand loyalty programs with high-dollar rewards. Additionally, as the OHCE consult notes, concerns were raised that the applicant's audience segmentation strategy does not fully align with demographic profiles of combusted tobacco users and appears to target younger adults (21+), raising potential concerns about youth exposure and appeal. If authorized, the FDA would closely monitor the marketing and use of the products. To reduce the potential for youth exposure to advertising of these products, the authorizations would impose marketing restrictions for digital, TV and radio, including measures to ensure ads are carefully targeted to adults ages 21 and older and the manufacturer tracks and measures demographics of the audiences reached by the ads. In addition, the applicant would be required to monitor and report on product use by youth as part of PMSS requirements.

Comments raised concern that nicotine pouches may be used concurrently with other tobacco and nicotine products rather than serving as a complete substitute for CC. Dual use and the

likelihood of complete switching are addressed in the epidemiology review and in section 3.4 of this review, both of which note that dual use is common. If authorized, the applicant's PMSS should assess whether dual users remain dual users or eventually completely switch or quit tobacco altogether.

Some comments raised concerns that marketing with the proposed claim could reduce motivation to quit all tobacco use, divert current tobacco users to the proposed MRTPs over FDA-approved cessation therapies, or cause former smokers to reinitiate tobacco use. These issues are addressed in the social science review.

3. SCIENTIFIC REVIEW

3.1. PRODUCT CHARACTERIZATION

The cross-referenced PMTAs (PM0000593.PD1-PM0000612.PD1, March 4, 2020) for these proposed MRTPs contain sufficient information to characterize the product design and composition, manufacturing, product stability, and product analyses, including the processes and controls in place to ensure consistent manufacturing and that the products meet all manufacturer specifications. This information is necessary to fully understand the product science, which, in turn, influences the potential health risks of the proposed MRTPs. As TPL, I did not identify any evidence in this application that changes the assessment of the product characterization information, including information about product design, manufacturing, product life cycle, and product stability, made in the 2025 ZYN PMTA TPL review.

3.2. RELATIVE HEALTH RISKS TO INDIVIDUAL TOBACCO USERS

3.2.1. Toxicant Exposure, Including HPHCs

According to the 2025 ZYN PMTA TPL review, testing results showed that levels of 36 of the 42 HPHCs reported for the proposed MRTPs are below the lower limit of quantification, and all testing methods used to measure HPHCs were validated and determined to be fit-for-purpose. The HPHCs that were quantifiable in at least one of the proposed MRTPs were acetaldehyde, coumarin, formaldehyde, naphthalene, nicotine, and nornicotine. From a toxicological perspective, the levels of these HPHCs were either comparable to or below those of comparison smokeless tobacco products or below the level that would be expected to pose a health risk. Notably, the previously authorized General Snus MRTPs (2019) contained quantifiable levels of NNN and nicotine-derived nitrosamine ketone (NNK) and higher levels of nitrite (a precursor of tobacco-specific nitrosamines [TSNAs]) and nornicotine (a precursor of NNN) compared to the proposed MRTPs. In addition, the proposed MRTPs did not produce genotoxic effects in the applicant's nonclinical toxicology studies (i.e., Ames test, in vitro micronucleus assay), while CCs produced genotoxic effects (2025 ZYN PMTA TPL review). Based on conclusions in the ZYN PMTA toxicology review, as well as the published literature on biomarkers of exposure and bridging information provided by the applicant, the TPL concluded that it is reasonable to expect that adults who smoke CC or use smokeless tobacco who switch completely to the proposed MRTPs would be exposed to fewer harmful toxicants, including NNN and NNK (2025 ZYN PMTA TPL review). For the current MRTPAs, the toxicology and chemistry MRTPA reviews also did a direct comparison of ZYN and CC and did not identify novel exposures of concern in the proposed MRTPs as compared with CC.

3.2.2. Clinical Assessment

3.2.2.1. Biomarkers of Exposure and Potential Harm

The applicant cross-referenced the PMTAs for most of the individual health risk evidence. For the current MRTPAs, the applicant also submitted a new biomarker study (SM22-03), which was a non-randomized, multi-center investigation conducted in Sweden in January-March 2023 to assess biomarkers of exposure and biomarkers of potential harm among different tobacco use groups. The study was reviewed by behavioral and clinical pharmacology (BCP), epidemiology and medical reviewers.

As described in the epidemiology review, the study enrolled 198 healthy adults ages 25-45 across four groups: exclusive Swedish Match-brand nicotine pouch use (50 participants), exclusive Swedish snus use (48 participants), exclusive CC use (50 participants), and no tobacco use (50 participants). Participants used their selected products exclusively for 14 days while recording usage patterns, with blood and urine samples collected (at Day 1 for the no tobacco use group and Days 1 and 14 for the tobacco use groups) for biomarker analyses.

As described in both the epidemiology and medical reviews, study results showed that the Swedish Match-brand nicotine pouch group had biomarker profiles similar to the group that did not use tobacco and consistently lower than the CC group. Specifically, biomarkers of the TSNAs 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) and NNN, were often below quantifiable limits for Swedish Match-brand nicotine pouch use, comparable to no tobacco use, and both quantifiable and higher for both Swedish snus and CC use. Additionally, 3-OH-B[a]P, the biomarker of the carcinogenic benzo[a]pyrene, was lower among the adults who used Swedish Match-brand nicotine pouches compared with those who use CCs and similar compared to those who use Swedish snus. Moreover, biomarkers of potential harm, including those related to inflammation and oxidative stress, were generally lower for Swedish Match-brand nicotine pouch use compared to CC use and often comparable to Swedish snus use and no tobacco use. Nicotine-related biomarker concentrations in the Swedish Match-brand nicotine pouch group were similar to the Swedish snus use group. Some measures of nicotine exposure were similar between the Swedish Match-brand nicotine pouch group and the CC use group, while other measures of nicotine exposure were higher in the Swedish Match-brand nicotine pouch group compared to the CC use group. As noted by the BCP reviewer, the nicotine pouches used by the participants in this study had higher nicotine concentrations, on average, than the proposed MRTPs.

While FDA considered these results, the study's interpretability is limited. As noted by the medical reviewer, the clinical significance of these biomarkers, specifically of human health effects or disease risk, remains to be fully determined. The epidemiology review also noted a number of limitations regarding generalizability, the cross-sectional design, and potential confounding factors such as sociodemographics and use behavior. First, the study was conducted in Sweden, and usage patterns in Sweden in a relatively young and healthy study population may not be generalizable to those in the U.S. Additionally, while the majority of the participants in the nicotine pouch products group used ZYN brand products (~65%), the products were not the same as the proposed MRTPs, and differed from the proposed MRTPs in terms of the variety of flavor and nicotine concentrations. Because the study products were not appropriately bridged to the proposed MRTPs from an abuse liability perspective, the data from SM22-03 were not considered in the BCP review (see section 3.4.1.2.). Additionally, there were no adjustments for potentially confounding sociodemographic or behavioral variables that may

explain group differences for some of the biomarkers. While use of other tobacco products was collected, these data were not presented.

While the data from SM22-03 informed the epidemiology review, they were not considered in the BCP review because the study products were not appropriately bridged to the proposed MRTPs from an abuse liability perspective (see section 3.4.1.2.). Nevertheless, as noted in the epidemiology review, the results of this biomarker study align with the recently published cross-sectional study by Azzopardi et al. (2023) sponsored by British American Tobacco, which documented statistically significantly lower concentrations of biomarkers for TSNAs, polycyclic aromatic hydrocarbons (PAHs), and other exposures in adults using a different brand nicotine pouch compared to those smoking CCs. Another recently published paper by Dai et al. (2026) based on the Population Assessment of Tobacco and Health Study (PATH) Wave 7 (2022-2023) data also observed higher cotinine concentrations in adults using nicotine pouches compared to those smoking CCs, corroborating the nicotine biomarker patterns observed in the SM22-03 analysis. Together, this biomarker evidence is consistent with HPHC data indicating that nicotine pouches generally present lower toxicant exposure than CCs, while delivering comparable amounts of nicotine.

3.2.2.2. Likelihood and Effects of Product Misuse

3.2.2.2.1. Adverse Experiences

The 2025 ZYN PMTA TPL review concluded that the types of AEs produced by the proposed MRTPs are unlikely to substantially differ from those produced by other smokeless tobacco products, and the oral lesions produced by the proposed MRTPs may be less severe. The medical review of these MRTPAs focused on the AE data from applicant-sponsored clinical studies, the applicant's consumer call centers, FDA's Safety Reporting Portal (SRP), published literature submitted in the MRTPAs and cross-referenced in TPMF (b) (4) and the medical reviewer's independent review of the published literature and data. The medical review found that the AEs documented in biomarker study SM22-03 were similar to the rate and type of AEs documented in the applicant-sponsored clinical studies reviewed in the 2025 ZYN PMTA TPL review. The Tobacco Product Surveillance Team conducted searches of the AE IMAGE database for AE reports submitted to FDA's SRP potentially involving the products subject to this review from January 1, 2014 to January 12, 2026; these searches identified 62 total reports (49 unique and 13 follow-up reports). There were 10 reports of product misuse, of which six were accidental pediatric exposures requiring medical intervention.

As described in the 2025 ZYN PMTA TPL review, the authorized products are packaged in polypropylene cans, consistent with 21 Code of Federal Regulations (CFR) 177.1520(c), with certified child-resistant safety lids to reduce risk of accidental exposure in children. The applicant states that the primary container is designed to be child-resistant: the consumer opens the can by breaking the label perforation and twisting the lid to align the top and bottom arrows on the can to lift the lid. Child-resistant packaging testing was performed and certified by Institut für Kindersicherheit im in Hamburg, Germany according to the requirements of 16 CFR 1700.20 - Testing procedure for special packaging; testing certified that the 195-1 CR snuff containers for the authorized products are child-resistant. As such, if used as intended by the manufacturer (e.g., closed after each use to avoid leaving the product exposed), the proposed MRTPs' child resistant packaging serves to mitigate the risk of nicotine poisoning among children ages 5 and under.

America's Poison Centers National Poison Data System (NPDS) is a data repository containing case information collected from contacts to regional poison control centers serving all 50 states and U.S. territories. During the three-year period from April 1, 2022, to March 31, 2025, the number of reported U.S. nicotine pouch exposure cases steadily increased from 181 cases in the second quarter of 2022 to 906 cases in the first quarter of 2025. Among cases including age information, 74.2% occurred among children under age 5, 3.0% among youth ages 5-11, 1.7% among adolescents ages 12-17, 6.34% among adults ages 18-24, and 14.8% among adults ages 25+.[11] Regarding medical outcomes, approximately half of exposure cases involving nicotine pouch cases resulted in either a minor effect[12] (19.0%) or no reported effect (28.1%); 50.6% of cases were not followed or unable to be followed. A major effect was experienced in three (0.06%) exposure cases. No deaths were reported.

A recent publication also presented NPDS data from 2010-2023 and found that the rate of nicotine pouch ingestions increased by 763.1% from 2020 to 2023 among children younger than age 6. The same study found that ingestion of nicotine pouches, compared to other nicotine product types, was more likely to be associated with a serious medical outcome (odds ratio (OR) 1.53, 95% confidence interval (CI) 1.10-2.13) or medical admission (OR 2.03, 95% CI 1.31-3.15) (Olivas et al., 2025).

Overall, the majority of nicotine exposure cases reported in NPDS occurred in children younger than 5 years old and more often resulted in no or minor effects. Nevertheless, the applicant will continue to be required to conduct surveillance, monitoring, and reporting of AEs to the Agency as standard practice if the proposed MRTPs are authorized.

3.2.3. Relative Individual Health Risks to Tobacco Users

Nicotine pouches are relatively newer than other well-established tobacco product categories, and there are currently no long-term epidemiological studies pertaining specifically to the proposed MRTPs or nicotine pouch use. The applicant did not submit any observational or clinical studies directly evaluating health outcomes associated with use of the proposed MRTPs. Instead, the applicant referenced the TPL review of MR0000020-22, MR0000024-25, MR0000027-29 (October 22, 2019) and the epidemiological data pertaining to Swedish snus, a smokeless tobacco product. As described in the 2025 ZYN PMTA TPL review, the applicant's justification for applying the published literature on the long-term health effects of Swedish snus use to the use of the proposed MRTPs was based on similarities in use topography and systemic nicotine exposure, among others. The applicant lists the following similarities between Swedish snus and the proposed MRTPs:

[11] Missing or incomplete data are excluded in the percentage values for age. Data are considered missing or incomplete when no information is provided for the variable or when listed as an estimated age such as age ≤5 years, teen (ages 13-19), unknown child (≤19), 20s, and Unknown Adult (age ≥20). Four persons listed as being in their 30s and 40s are categorized as age ≥25.

[12] On the basis of definitions provided by NPDS, patients experiencing a minor effect exhibit some signs and symptoms from the exposure, which would usually resolve rapidly, such as mild, self-limited gastrointestinal symptoms, without dehydration or transient cough. Persons experiencing a moderate effect exhibit more pronounced and prolonged signs and symptoms for which some form of treatment would be indicated, such as a high fever, disorientation, or gastrointestinal symptoms causing dehydration. Major effects from exposure are life-threatening or might result in severe signs and symptoms (e.g., repeated seizures, cardiac arrest, or respiratory arrest), severe disability, or disfigurement.

Product characteristics

- Both products are pouched and thus have a similar appearance.
- Both are manufactured by the applicant under similar quality management systems.
- Both have similar types of flavors.
- Nicotine content, pH, route of exposure, and exposure levels are comparable.

Use patterns

- Both products are non-combusted and used by placing them in the oral cavity where nicotine dissolves in saliva and is absorbed through the mouth's mucous membrane.
- Both have similar use patterns such as frequency of use, duration of use, and amount used.

Consumer characteristics

- The user populations of Swedish snus and the proposed MRTPs overlap; many consumers who use the proposed MRTPs previously used moist snuff or snus.

As summarized above, product testing showed that levels of nearly all HPHCs reported were lower in the proposed MRTPs than in Swedish snus. The biomarker study SM22-03, though limited, further supports that using the proposed MRTPs exposes individuals to lower levels of HPHCs than using Swedish snus. The toxicology review did not identify novel toxicological concerns associated with the proposed MRTPs.

As concluded in the TPL reviews for the General Snus MRTPAs MR0000020-22, MR0000024-25, MR0000027-29 (October 22, 2019) and MR0000256.PD1-MR0000256.PD5, MR0000256.PD7-MR0000256.PD9 (November 7, 2024), the available epidemiological evidence on Swedish snus demonstrates that, compared to CC smoking, exclusive Swedish snus use is associated with statistically significantly lower risks of several smoking-related diseases, including oral cancer, lung cancer, heart disease, stroke, and chronic obstructive pulmonary disease (COPD). Lower levels of HPHC exposure, as well as differences in route of exposure, play a major role in the lower risks posed by Swedish snus use as compared to CC smoking for these smoking-related diseases. Given that the proposed MRTPs have the same route of exposure, similar use patterns, and lower HPHC levels compared to Swedish snus, the applicant reasoned that the long-term health effects of the proposed MRTPs are lower than the health effects of Swedish snus. As TPL, I agree with the applicant's reasoning; FDA is able to draw conclusions about health risks of the proposed MRTPs based on the epidemiological evidence that characterizes the relative health risks of Swedish snus.

3.2.3.1. Mouth Cancer

FDA concluded in the 2019 General Snus MRTPA TPL reviews and the 2024 General Snus renewal MRTPA TPL review that the risk of developing oral cancer is substantially lower in adults who exclusively use Swedish snus than in adults who smoke CCs. In its renewal MRTPAs for General Snus, the applicant submitted a pooled analysis of nine Swedish cohort studies, which found that ever snus use was not associated with oral cancer when compared to never snus use (adjusted hazards ratio [aHR] 0.90, 95% CI 0.74–1.09), including among adults who never smoked (HR 0.87, 95% CI 0.57–1.32) (Araghi et al., 2021) (2024 General Snus MRTPA TPL

review). These newer results align with previous epidemiological reviews of Swedish data indicating no clear association between Swedish snus use and oral or pharyngeal cancer risk. In comparison, CC smoking is associated with about 11 times the risk of oral cancer than that in adults who never smoked, as noted in the 2019 General Snus MRTPA TPL review (unpublished data based on Cancer Prevention Study II, 1982-1988). Given the epidemiological literature on the health risks of Swedish snus and the similarities between Swedish snus and these proposed MRTPs, as TPL, I find that the applicant has demonstrated that the use of the proposed MRTPs poses a lower risk of mouth cancer than CC smoking.

3.2.3.2. Heart Disease

Nicotine activates the sympathetic nervous system and causes acute cardiovascular effects such as increased heart rate and blood pressure, but there is currently no consistent evidence to suggest these changes lead to long-term cardiovascular risk (Dennison Himmelfarb et al., 2025). In a recent analysis of PATH Study biomarker data, adults who use smokeless tobacco had higher nicotine biomarker concentrations, but lower inflammatory and oxidative stress biomarker concentrations compared with adults who smoke CCs, suggesting that cardiovascular disease (CVD) risk among adults who smoke may be primarily driven by tobacco constituents other than nicotine (Rezk-Hanna et al., 2022). Similarly, given that nicotine pouches are non-combustible as well, we would expect there to be lower CVD risk among nicotine pouch users compared to CC smokers.

The 2019 General Snus MRTPA TPL review and the 2024 General Snus MRTPA TPL review reported that adults who use snus may have elevated cardiovascular risk compared to those who do not use tobacco; however, the risk was statistically significantly lower than that of adults who smoke CC. Most recently, a meta-analysis found no significant increase in the risk of ischemic heart disease or acute myocardial infarction among adults who currently use Swedish snus and never smoked CC compared to adults who do not use snus and never smoked CC (Lee et al., 2022). A prospective cohort study (Yuan et al., 2022) found that Swedish snus use was not associated with peripheral artery disease (HR 0.88, 95% CI 0.66–1.17), whereas CC smoking was strongly associated with it (HR 4.01, 95% CI 3.17–5.08). A pooled analysis found that among adults who never smoked CCs, exclusive current snus use compared to never tobacco use was associated with increased CVD mortality (aHR 1.27, 95% CI 1.15-1.41) (Byhamre et al., 2021). In comparison, CC smoking is associated with 2.5 to 3 times the risk of dying from CVD compared to that of adults who never smoked CCs (Thun et al., 2013). Given the epidemiological literature on the health risks of Swedish snus and the similarities between Swedish snus and these proposed MRTPs, as TPL, I find that the applicant has demonstrated that use of the proposed MRTPs pose a lower risk of heart disease than CC smoking.

3.2.3.3. Stroke

As described in the 2019 General Snus MRTPA and the 2024 General Snus renewal MRTPA TPL reviews, an FDA-led systematic review and meta-analysis (Rostron et al., 2018) found that in Swedish studies of adults who never smoked CCs, current snus use was not linked to increased stroke risk (RR 1.04, 95% CI 0.92–1.17, n = 1). In comparison, the risk of dying from stroke is twice as high among people who smoke CCs compared to those who never smoked (Thun et al., 2013). The totality of the evidence suggests the risk of stroke is lower in adults who use snus than in those who smoke CCs. Given the epidemiological literature on the health risks of Swedish snus and the similarities between Swedish snus and these proposed MRTPs, as TPL, I

find that the applicant has demonstrated that use of the proposed MRTPs pose a lower risk of stroke than CC smoking.

3.2.3.4. Lung Cancer

The 2019 General Snus MRTPA TPL reviews concluded that Swedish snus use does not significantly increase the risk of lung cancer. In a cohort of never-smoking Swedish construction workers, Luo et al. (2007) reported a relative risk of 0.8 (95% CI 0.5–1.3) for lung cancer among adults who use snus compared with those who do not use tobacco. Earlier work by Bolinder et al. (1994) also found no excess lung cancer risk among adults who use snus. In contrast, the risk of dying from lung cancer is 25 times higher among adults who smoke CCs than those who do not smoke (Thun et al., 2013). Collectively, these findings demonstrate that exclusive Swedish snus use is not associated with increased lung cancer risk and that the risk is substantially lower than that associated with CC smoking. Given that the proposed MRTPs likewise do not involve inhalation or combustion, the epidemiological literature on the health risks of Swedish snus and the similarities between Swedish snus and these proposed MRTPs, as TPL, I find that the applicant has demonstrated that use of the proposed MRTPs pose a lower risk of lung cancer than CC smoking.

3.2.3.5. Emphysema and Chronic Bronchitis

As summarized in the 2019 General Snus MRTPA TPL reviews, the use of smokeless tobacco products like snus is not expected to cause respiratory disease, including emphysema and chronic bronchitis, which is associated with inhaled toxicants. As described in the 2019 General Snus MRTPA TPL reviews, the literature submitted indicates no association between smokeless tobacco product use and chronic respiratory disease, which is believed to be due to the lack of inhaled irritants being introduced directly into the lungs (Kirkham et al., 2013; Schivo et al., 2014; Stevenson et al., 2006). In contrast, CC smoking is associated with 22-25 times the risk of dying from COPD as having never smoked (Thun et al., 2013). Given that the proposed MRTPs likewise do not involve inhalation or combustion, the epidemiological literature on the health risks of Swedish snus and the similarities between Swedish snus and these proposed MRTPs, as TPL, I find that the applicant has demonstrated that use of the proposed MRTPs pose a lower risk of emphysema and chronic bronchitis than CC smoking.

3.2.4. Synthesis and Assessment of Claim Substantiation

As described in the 2025 ZYN PMTA TPL review, 36 of the 42 HPHCs reported for these ZYN products are below the lower limit of quantification. The epidemiology review also concluded that the new biomarker study (SM22-03) submitted in the current MRTPAs demonstrated that Swedish Match-brand nicotine pouch users had biomarker profiles similar to non-users and consistently lower than those observed in CC smokers.

Nicotine pouches are newer than other well-established tobacco product categories and there are currently no long-term epidemiological studies pertaining specifically to the proposed MRTPs or nicotine pouch use. Thus, the applicant cites the 2019 General Snus MRTPA TPL review that summarizes the epidemiological evidence of the health effects associated with Swedish snus use to support its proposed claim while noting the many similarities between Swedish snus and the proposed MRTPs such as product characteristics, including low HPHC quantities, and use topography. In the 2025 ZYN PMTA TPL review, FDA reviewers concluded that the Swedish snus epidemiological studies were applicable to the health risks of these ZYN

products based on similarities in product characteristics between Swedish snus and the proposed MRTPs. The published literature on the health risks of Swedish snus use relative to CC smoking was summarized in the 2019 General Snus MRTPA TPL review. As concluded in the 2019 General Snus MRTPA TPL review, the scientific evidence supported that compared to CC smoking, exclusive snus use is associated with lower risk of the following health outcomes: mouth cancer, heart disease, stroke, lung cancer, emphysema, and chronic bronchitis. Given that the epidemiological literature on the health risks of Swedish snus relative to CC smoking and the similarities between Swedish snus and these proposed MRTPs, as TPL, I find that, based on the evidence described above, the proposed modified risk claim, "Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis." is scientifically accurate.

3.3. CONSUMER UNDERSTANDING AND PERCEPTIONS

In support of these MRTPAs, the applicant submitted a new study titled SMNA 5240072 "Quantitative Study to Assess Perceptions of and Likelihood of Use of ZYN® with Modified Risk Claims Among US Adults," hereafter referred to as the "perceptions and likelihood of use study."

As described in the social science review, this study was a web-based, quasi-experimental, pre-post-test in which respondents were assigned to one of two study conditions using least-filled quota assignment. This approach assigns a given participant to the condition that currently has the least number of participants at the time the assignment is made, resulting in non-random assignments. The two conditions involved viewing an advertisement with (test) or without (control) the proposed modified risk claim. Respondents were assigned to a study condition, completed a pre-test, viewed their assigned advertisement, and completed a post-test. The applicant drew the sample from unspecified consumer panels, with a final sample of 3,450 respondents. The applicant created five respondent groups based on self-reported tobacco product use:

1. Combusted cigarette use (n=1,010)
    a. Smoked 100+ combusted cigarettes in lifetime and currently smoke every day or some days.
2. Former combusted cigarette use and/or current use of other tobacco products (N=610)
    a. Formerly used combusted cigarettes and now either do not use any tobacco products or use tobacco products other than combusted cigarettes or smokeless tobacco products.
    b. Never used combusted cigarettes and currently use tobacco products other than combusted cigarettes or smokeless tobacco products.
3. Current smokeless tobacco use (n=610)
    a. Currently use any type of smokeless tobacco product every day or some days and have not smoked 100+ combusted cigarettes in their lifetime.
4. Never regularly used tobacco in the general population (ages 21+) (n=610)
    a. Have used fewer than 100 tobacco product units in their lifetime and have not used any in the past 30 days.
5. Young adults who never regularly used tobacco (ages 21-24) (n=610)
    a. Have used fewer than 100 tobacco product units in their lifetime and have not used any in the past 30 days.

This study examined the impact of the proposed modified risk claim on the following outcomes: intentions to use tobacco products, intentions to use ZYN (measured at post-test only) and nicotine pouches (measured at pre-test only), intentions to quit smoking CC, absolute and relative risk perceptions, and understanding of the information presented on the advertisement about ZYN (e.g., minimum age of sale, flavors, nicotine concentrations available).

3.3.1. Understanding of the Risk Reduction Described in the claim

Respondents reported relative risk perceptions of using the proposed MRTPs compared to CCs, smokeless tobacco, nicotine pouches, ENDS, and FDA-approved cessation therapies for each health condition mentioned in the proposed claim using the following item for each comparator tobacco product, “After reviewing this product and the possible health or addiction risks to you, personally, of using this product, how do you think ZYN compares to [PRODUCT] specific to [HEALTH CONDITION]?” Response choices were, “no risk,” “lower risk,” “same amount of risk,” “higher risk,” and “don’t know.”

Across all respondent groups, compared to respondents who did not view the proposed claim, a higher percentage of respondents who viewed the proposed claim perceived the proposed MRTPs to be less risky than CCs for the health conditions mentioned in the claim. However, the applicant did not report tests of statistical significance. Among adults who use CCs, nearly 48% of respondents who saw the proposed claim (vs. 44% of those who did not) perceived the proposed MRTPs to confer lower lung cancer risk than CCs. Similarly, among young adults who never regularly used tobacco, 39% of respondents who saw the claim (vs. 35% of those who did not) perceived the proposed MRTPs to carry lower lung cancer risk than CCs. Among adults who were using CCs, 38.8% of respondents who saw the claim (vs. 35.1% of those who did not) perceived the proposed MRTPs to confer lower mouth cancer risk than CCs. Similarly, among young adults who never regularly used tobacco, 31.5% of respondents who saw the claim (vs. 21% of those who did not) perceived the proposed MRTPs to confer lower mouth cancer risk than CCs. The study yielded similar findings for the remaining four health conditions referenced in the proposed claim among respondent groups that used and never regularly used tobacco. The applicant did not provide 95% CIs or other estimates of statistical variance that would have indicated whether relative risk perceptions of the proposed MRTPs compared to CCs statistically significantly differed between the test condition and the control condition. Instead, the applicant directly measured relative risk perceptions of the proposed MRTPs compared to CCs for the health conditions mentioned in the claim and reported a distribution of the test and control groups’ relative risk perceptions. The applicant’s findings show a consistent pattern of results that align with broader research on perceptions of the relative risk of nicotine pouches. For example, a recent study cited by the applicant tested the exact proposed claim (exclusive of the product name) on a blinded product: the proposed MRTPs were provided to respondents in a container with no product name or branded imagery on the label. Compared to respondents who did not see the claim, those who did were statistically significantly more likely to believe that the nicotine pouch product was less likely to cause the health conditions mentioned in the proposed claim compared to CCs, though the difference observed was relatively modest (Vogel et al., 2025). Taken together, the findings from the perceptions and likelihood study as well as findings from the broader literature, including from a study that examined the proposed claim and the proposed MRTPs, suggest consumers understand the risk reduction described in the claim.

3.3.2. Understanding that the Proposed MRTPs Still Pose Health Risks, Including Addiction

As noted in the social science review, although those who viewed the claim perceived the proposed MRTPs as relatively less risky, the applicant's findings also indicate consumers correctly understood that the proposed MRTPs are not risk-free. Following exposure to the stimuli, the applicant measured absolute risk perceptions of the proposed MRTPs for twelve health outcomes on a 5-point scale (ranging from 1 = "No Risk" to 5 = "Very High Risk"). Overall, regardless of health outcome and across all tobacco use groups and study conditions, respondents on average perceived the proposed MRTPs to confer health risk (*M* = 2.6-3.9). Among adults who use CCs, the claim did not impact absolute risk perceptions of the proposed MRTPs for any health condition mentioned in the claim. Among young adults who never regularly used tobacco, the claim impacted absolute risk perceptions only for mouth cancer, with those who viewed (vs. did not view) the proposed claim perceiving the proposed MRTPs to confer lower mouth cancer risk (*M* 3.4, 95% CI 3.3-3.5 vs. *M* 3.7, 95% CI 3.6-3.9).

Additionally, respondents answered a true/false question that asked, "Would you say ZYN is…" followed by four statements. The second statement was "is risk free." Across both the test and control groups, 82% of adults who use CCs, 92% of young adults who never regularly used tobacco, and more than 76% of the other respondent groups answered "false" to this statement, indicating they perceived the proposed MRTPs to confer health risk. Respondents answered another true/false question that asked, "Which of the following chemicals does ZYN contain?" followed by four response options. Across all tobacco use groups, the majority of respondents chose the correct answer, "Nicotine, which is addictive," including 85% of adults who use CCs and 81% of young adults who never regularly used tobacco. This suggests that respondents understood that the proposed MRTPs are addictive.

3.3.2.1. Perceptions of Risk Compared to Using FDA-Approved Cessation Therapies

As described in the social science review, the applicant's perceptions and likelihood study measured risk perceptions of the proposed MRTPs relative to nicotine replacement therapies (NRT). When relative risk was assessed directly (i.e., using relative risk items), the study found that viewing the claim led to an increase in the proportion of consumers who perceived the proposed MRTPs to be less harmful than NRT for each health condition mentioned in the proposed claim. For example, compared to the 23% of CC users who did not see the claim, 27% of CC users who saw the claim perceived the proposed MRTPs to confer lower lung cancer risk than FDA-approved cessation therapies. The applicant did not provide statistical tests or other estimates of statistical variance, such as 95% CIs, for this comparison. These findings should be considered in the context of existing research showing that, similar to other tobacco product types, some consumers perceive FDA-approved cessation therapies to be as harmful or more harmful than nicotine pouches (Brierley et al., 2025). Additionally, this pattern was observed for relative risk perceptions only and not for absolute risk perceptions. Among respondents who saw the claim, ratings of the absolute risks of NRT were consistently lower than their ratings of the absolute risks of the proposed MRTPs.

3.3.2.2. Perceptions of Risk Compared to Quitting All Tobacco Use or Never Using Tobacco Products

In the perceptions and likelihood of use study, the applicant assessed absolute risk perceptions associated with cessation of all tobacco use prior to exposing respondents to the proposed claim, but not after having seen the claim. The applicant did not assess the effect of the proposed claim on risk perceptions of using the proposed MRTPs compared to never using tobacco products or relative to quitting all tobacco use. The social science review noted that not including this information impacts FDA's assessment of how the claim might impact risk perceptions of the proposed MRTPs compared to cessation and non-use. However, the applicant did submit data regarding the impact of the claim on intended cessation behavior. These data indicate the proposed claim does not reduce intentions to quit smoking among people who currently use CCs, as discussed in more detail in section 3.4.1.4. Likewise, the applicant submitted data regarding the impact of the claim on intentions to use the proposed MRTPs among adults who never regularly used tobacco products. Together, these data indicate that the proposed claim does not decrease intentions to quit smoking among CC users, nor does it increase intentions to begin using the proposed MRTPs among adults and young adults who never regularly used tobacco, as discussed in more detail in section 3.4.2 below. These findings suggest that the impacts of the proposed claim on perceptions of risk of using the proposed MRTPs relative to cessation of CC smoking, or relative to never using tobacco, do not translate to changes in behavioral intentions that are suggestive of public health harms. If an MRGO is issued, as part of determining the impact of the order on consumer perception, behavior, and health, I, as TPL, recommend that consumers' perceptions of the relative risk of using the proposed MRTPs compared to cessation of all tobacco use, as well as compared to never using tobacco products, be monitored in postmarket surveillance.

3.3.3. Understanding How to Use the Proposed MRTPs to Reduce Risk

Examining whether consumers understand how to use the proposed MRTPs to receive the health benefits described in the claim (i.e., that they need to completely switch from CCs to the proposed MRTPs) helps FDA evaluate whether the applicant has demonstrated that the proposed claim will enable the public to comprehend the information concerning modified risk. Of note, dual use of nicotine pouches and CCs is fairly common; approximately one quarter of adults who currently use nicotine pouches also currently use CCs (Palmer et al., 2025; Reyes-Guzman et al., 2025).

The proposed claim appears to specify how to use the proposed MRTPs to confer lower risk of specific health conditions by using the phrase "…instead of cigarettes." As part of the current applications, the applicant cited the PBI study submitted in the General Snus MRTPAs (authorized in 2019) to test their claim for its MRTPs authorized in 2019. This claim is identical aside from product name to what is being proposed for the proposed MRTPs subject to this review. The PBI study included an item that asked adults who use CCs how many CCs they could smoke per day while also using the previously authorized MRTPs (2019) and still achieve lower disease risk. Findings indicated that a considerable proportion of consumers understood that they would need to switch completely to confer lower disease risk. Viewing the proposed claim increased the proportion of adults who smoke that responded "Zero (0) cigarettes," which the applicant defined as correct (young adults who smoke: 56% with the claim, 45% without the claim; older adults who smoke: 44% with the claim, 34% without the claim). These findings

suggest that, while a substantial proportion of consumers already understood that complete switching is necessary to lower disease risk, the claim improved consumers' understanding of the need to completely switch. At the same time, adding the proposed claim did not increase the proportion of adults who smoke who responded: "Up to 5 cigarettes," "Up to 20 cigarettes," or "As many as you want to smoke." These findings suggest that, for the previously authorized MRTPs (2019), consumers demonstrated adequate understanding of what they need to do (i.e., completely switch) to receive the health benefits specified by the proposed claim, and the claim improved this understanding. FDA expects the level of understanding of the clause "instead of" would remain the same in this context. As TPL, I find that the evidence suggests the language "instead of cigarettes" used in the proposed claim is adequately understood by consumers to indicate complete switching.

3.3.4. Synthesis and Assessment of Relevant Statutory Standards

A single exposure to the proposed claim appeared to reduce relative risk perceptions of the proposed MRTPs compared to CCs for the health conditions mentioned in the claim, though tests of statistical significance were not reported. Study findings also suggest that, even with these slight reductions in perceived relative risks, consumers appeared to understand that using the proposed MRTPs poses some risk to health, including risk of addiction.

The applicant's PBI study demonstrates that consumers appear to have adequate understanding that the phrase "instead of" in the proposed claim means they need to completely switch to the proposed MRTPs to receive the health benefits specified by the proposed claim. As TPL, I find that this evidence supports that consumers understand that they need to completely switch to receive the health benefits described in the proposed claim.

Viewing the claim led to an increase in the proportion of consumers who perceived the proposed MRTPs to be less harmful than NRT. However, this pattern of results was not observed in absolute risk perceptions of NRT, which were not impacted by the claim. This finding about the risk of the proposed MRTPs vs. FDA-approved cessation therapies may raise the question of whether this could present a reason for consumers who were considering using FDA-approved cessation therapies to use the proposed MRTPs instead. However, I as TPL find that the results discussed in section 3.4.1.4, showing that exposure to the modified risk claim did not reduce intentions to quit smoking, mitigate this concern.

Overall, these results provide evidence that adults generally understood the proposed modified risk claim and the health risks of using the proposed MRTPs in the context of total health. Exposure to the claim led to greater understanding that the relative risk of the proposed MRTPs is lower compared to CCs with respect to the health outcomes described in the claim, which is substantiated by the scientific information provided by the applicant, as discussed in section 3.2. The evidence supports the conclusion that adults understood how to use the MRTPs to receive the health benefits described in the claim, i.e., completely switch from CCs to the MRTPs. As TPL, I find that the totality of the evidence supports the conclusion that the claim will be understood by consumers in the context of total health and in a manner that could reduce harm to individual tobacco users and benefit the health of the population as a whole.

3.4. TOBACCO USE BEHAVIOR AND IMPACTS TO THE POPULATION AS A WHOLE

3.4.1. Current Tobacco Users

3.4.1.1. Intended User Population(s)

The applicant describes the intended user population as "current adult tobacco consumers." In terms of the populations that actually use the proposed MRTPs, the most recent estimates from national surveys indicate that adult nicotine pouch use prevalence is relatively low. As described in the epidemiology review, data from the September 2022 TUS-CPS show that 0.4% of U.S. adults reported current use of nicotine pouches. Current nicotine pouch use was most commonly reported among males, adults ages 18-34, non-Hispanic White individuals, people living in urban areas, and people with a household income of at least $75,000 a year. Among those currently using nicotine pouches, 24.8% also reported current smoking, 33.8% reported former smoking, and 41.4% reported never smoking, but those individuals may have used other tobacco products (Reyes-Guzman et al., 2025). Indeed, another study using 2022-2023 TUS-CPS data found that, among adults who had ever used nicotine pouches, use among adults who had never used any tobacco before was rare,[13] suggesting that, based on the currently available data, nicotine pouches are not a product of tobacco use initiation among adults. Daily nicotine pouch use was more common among adults who recently quit smoking cigarettes and ever used smokeless tobacco (Delnevo et al., 2025). Another study using the September 2022 TUS-CPS data found that, among adults reporting current smoking, those who attempted to quit smoking CC in the last year (vs. those who did not) were more likely to report current nicotine pouch use (1.6% vs. 0.6%; aOR 3.2, 95% CI 1.8-5.7, $P < 0.001$) (Dai et al., 2024). With respect to young adults, a recent analysis of PATH Wave 8 data likewise shows that young adults (age 18-24) who reported current or former use of cigarettes, ENDS, cigars, or smokeless tobacco had significantly higher odds of reporting current nicotine pouch use compared to young adults who had never used these product types (Anesetti-Rothermel, 2026).

While the TUS-CPS does not include questions about brand preferences, the proposed MRTPs were the most popular nicotine pouch brand in the U.S. at that time, and overall nicotine pouch sales were increasing (Majmundar et al., 2022). Similarly, based on population estimates from an internal analysis of PATH Study Wave 8 (fielded January 2024 to December 2024) 2.1% of US adults reported current use of nicotine pouches defined as use pouches every day, some days, or use in the past 30 days. Among adults currently using nicotine pouches, PATH Study Wave 8 data showed that ZYN was the most popular reported brand: 67.4% of adults who could recall the name of the brand they last or usually used reported using ZYN.

The available nationally representative data from the most recent (2022-2023) TUS-CPS, as well as PATH Wave 8 (2024), suggest that, among adults, nicotine pouches are primarily used by people with a history of other tobacco product use. While the evidence from the 2022-2023 TUS-CPS and PATH Wave 8 is about nicotine pouches more broadly, the proposed MRTPs' position as the most popular nicotine pouch brand at the time of data collection would suggest that these findings on adult nicotine pouch use prevalence are relevant to the proposed MRTPs.

[13] Unweighted estimate: 1.8% (unpublished; calculated by FDA)

3.4.1.2. Abuse Liability

In the 2025 ZYN PMTA TPL review, the TPL concluded that based on the information provided by the applicant, the proposed MRTPs' abuse liability, i.e., the ability of the products to promote continued use, and the development of addiction and dependence, is expected to be lower than that of CCs and lower than some smokeless tobacco products. In support of these MRTPAs, the applicant submitted a new sponsored clinical study, SM22-03. According to the BCP review, the study findings suggest that the abuse liability of Swedish Match-brand nicotine pouch products may be similar to that of Swedish snus products and CCs, as no statistically significant difference in plasma nicotine concentration was observed between users of Swedish Match-brand nicotine pouches, Swedish snus, and CCs after 14 days of ad libitum use of the participants' product of choice. However, the BCP review notes that the study products differed from the proposed MRTPs in terms of nicotine content, flavor, and brand. In particular, the study products had higher average nicotine content than the proposed MRTPs. The BCP review noted that the extent to which these differences impacted nicotine exposure and abuse liability was unclear, as the applicant did not provide information showing that this evidence about the study products is relevant to the proposed MRTPs. Therefore, the BCP review relied on the findings of the 2025 ZYN PMTA TPL review. This review concluded that these ZYN products are not expected to have abuse liability greater than the General Snus or moist snuff comparison products. As TPL, I agree with the BCP review conclusion that there is currently no new information on abuse liability that would result in a change to FDA's conclusions regarding abuse liability in the 2025 ZYN PMTA TPL review for the purposes of this review.

3.4.1.3. Product Use

In support of this application, the applicant cross-referenced the Patterns of Use study submitted in the PMTAs authorized in 2025 for the proposed MRTPs. As described in the epidemiology review and in the 2025 ZYN TPL review, this study examined patterns of use, including likelihood of complete switching from CC to the proposed MRTPs, without the presence of the proposed modified risk claim. The Patterns of Use study consisted of a cross-sectional retrospective survey, a 10-week prospective study, and a post-hoc flavor analysis.

In the cross-sectional retrospective survey, participants were asked to recall tobacco product use over the preceding 30-day period, reasons for using the proposed MRTPs, and intentions to quit using specific types of tobacco products. Participants included 1,266 adults who used the proposed MRTPs and 733 participants who only used other tobacco products. Among participants using the proposed MRTPs, 42% reported smoking CCs during the weeks prior to using the proposed MRTPs. In the time period between initiating use of the proposed MRTPs and completing the retrospective survey (median time = 5-6 months; range ≤1 month-24 months), the prevalence of CC use decreased from 42.0% to 15.1%, suggesting that some participants completely switched to the proposed MRTPs. Among adults who smoked, those who also used the proposed MRTPs reported a greater intention to quit smoking compared to those who did not use them (mean values of 4.98 and 3.18, respectively, on a 7-point scale).

The 10-week prospective study evaluated patterns of use among adults using the proposed MRTPs (n = 346) and adults using tobacco products other than the proposed MRTPs (n = 196). Among participants using the proposed MRTPs, the proportion of those also using CCs declined from 15.9% to 8.1% over the course of the study. This finding suggests that approximately half of participants who dual-used CCs and the proposed MRTPs completely switched to the proposed

MRTPs by the end of the study period. Nearly one quarter of participants (24%, 83/346) who used the proposed MRTPs completely switched from other tobacco products (such as CCs, moist snuff, snus, e-cigarettes, cigars, or cigarillos) and reported exclusive use of the proposed MRTPs by end of the study.

Of note, the Patterns of Use study experienced significant loss to follow-up: a large proportion of participants using the proposed MRTPs (49%) and participants using tobacco products other than the proposed MRTPs (54%) left the study before it was completed and were not replaced. The applicant reported switching data only for participants who completed the 10-week prospective study. The 2025 ZYN TPL review notes that the Patterns of Use study did not include an analysis that would have shown whether there were systematic differences between those lost to follow-up and those who remained in the study, and, therefore, the degree to which this loss-to-follow-up influenced the results is unclear. As TPL, I concur with the conclusion of the 2025 ZYN TPL review that these findings suggest that some proportion of adults who smoke and/or use smokeless tobacco products find the proposed MRTPs to be suitable substitutes, study limitations notwithstanding.

3.4.1.4. Likelihood of Use After Exposure to Modified Risk Claim

As described in the social science review, the applicant's perceptions and likelihood of use study assessed the effect of the proposed modified risk claim on consumers' intentions to use nicotine pouches, intentions to use the proposed MRTPs, and, among respondents who reported current smoking, intentions to quit CCs. Intentions were measured using the 11-point Juster scale in which those who selected 0 reported no or almost no chance that they will use the proposed MRTPs or nicotine pouches on a regular, ongoing basis, and those who selected 10 reported they are certain or practically certain to use the proposed MRTPs or nicotine pouches on a regular, ongoing basis (Juster, 1966).

The social science review notes that viewing the stimuli with the proposed claim did not impact intentions to use the proposed MRTPs relative to viewing the stimuli without the claim. Intentions to use nicotine pouches (measured pre-exposure) and the proposed MRTPs (measured post-exposure) were generally higher among respondents using smokeless tobacco (M = 4.2-5.1) than among respondents using CCs (M = 2.5-3.8). The social science review notes that the CC use and current smokeless tobacco use groups in this study included respondents who, at the time of the study, also used nicotine pouches (19.4% of those currently using CCs and 52.6% of those currently using smokeless tobacco). As TPL, I concur with the findings of the social science review that this may have caused ceiling effects (i.e., narrowed the study's ability to detect an impact of the proposed claim because intentions to use nicotine pouches in this subgroup were likely already high and thus could not increase much further after claim exposure). Additionally, it is possible that with repeat exposure in a real-world scenario , the proposed claim may have effects on quit intentions that are not reflected in these findings.

Among respondents currently using CCs, intentions to quit smoking were similar between respondents who saw the proposed claim and respondents who did not see the proposed claim. Prior to exposure to the stimuli, respondents currently using CCs had some motivation to quit smoking as measured by the Motivation to Stop Scale (MTSS), which uses a 7-point response

scale (Kotz et al., 2013).[14] Pre-exposure averages on the MTSS were similar between the test and control groups, with overlapping 95% CIs (test: *M* 3.3, 95% CI 3.2-3.5; control: *M* 3.6, 95% CI 3.4-3.7). After exposure to the stimuli, there continued to be similar average MTSS scores between the test and control groups. As TPL, I determine that these findings suggest that the proposed claim does not reduce intentions to quit smoking among people who currently use CCs. This supports that exposure to the proposed claim will not deter quitting smoking among those who would have otherwise quit. However, it is possible that with repeated exposure in a real-world scenario, the proposed claim may have effects on quit intentions that are not reflected in these findings.

3.4.2. Non-Tobacco Users (including Youth)

In terms of existing youth use of the proposed MRTPs, estimates from national surveys and other published findings indicate that prevalence of nicotine pouch use among youth is currently relatively low. Data from the 2025 NYTS show that an estimated 1.7% of U.S. middle school and high school students reported current use of nicotine pouches (Park-Lee et al., 2026), including 0.9% of middle school students and 2.3% of high school students (Center for Rapid Surveillance of Tobacco et al., 2026; Park-Lee et al., 2026). NYTS data show a statistically significant increase in current nicotine pouch use among high school students from 2022 to 2025 (1.4% to 2.3%), though prevalence remains relatively low and was stable from 2024 to 2025. Data from the 2025 NYTS indicate that the proposed MRTPs are the most popular nicotine pouch brand among youth: 69.2% of middle and high school students who reported current nicotine pouch use reported that the proposed MRTPs are their usual brand (Park-Lee et al., 2026). Results from a recently published study using Monitoring the Future (MTF) Study data found that 2.6% of students in grades 10 and 12 students reported current nicotine pouch use in 2024, similar to the NYTS 2025 estimate for high school students. An analysis of these MTF data showed a statistically significant increase in current nicotine pouch use among students in grades 10 and 12 between 2023 to 2024 (1.3% to 2.6%) (Han et al., 2025), though prevalence remains relatively low.

In terms of existing impacts on adults who do not use tobacco products, as described above, a study using 2022-2023 TUS-CPS data found that, among adults who had ever used nicotine pouches, use among adults who had never used tobacco before was rare.[15] These findings suggest that, based on the currently available data, nicotine pouches are not generally a product of tobacco use initiation among adults (Delnevo et al., 2025).

As TPL, I consider the behavioral intentions findings from the perceptions and likelihood of use study regarding the likely impact of the proposed claim in the context of these existing use patterns. As noted in the social science review, overall, the proposed claim had no impact on intentions to use the proposed MRTPs among adults who formerly used CCs, adults using other tobacco products, and adults who never regularly used tobacco products (both general population and young adults). Intentions to use nicotine pouches (pre-exposure) and the

[14] The MTSS is a single question item: "Which of the following describes you?" The response categories are: (1) "I don't want to stop smoking;" (2) "I think I should stop smoking but don't really want to;" (3) "I want to stop smoking but haven't thought about when;" (4) "I REALLY want to stop smoking but I don't know when I will;" (5) "I want to stop smoking and hope to soon;" (6) "I REALLY want to stop smoking and intend to in the next 3 months;" and (7) "I REALLY want to stop smoking and intend to in the next month."

[15] Unweighted estimate: 1.8% (unpublished; calculated by FDA)

proposed MRTPs (post-exposure) were low across these three groups. Across all three groups, the average post-exposure intentions to use the proposed MRTPs were similar between the test group exposed to the proposed claim and the control (unexposed) group. There were also no within-group differences between the pre-exposure average intentions to use nicotine pouch scores and the post-exposure average intentions to use the proposed MRTPs scores across these three groups.

Youth and young adults who do not use tobacco are among the populations that would not stand to benefit from the use of a lower risk alternative to CCs. The applicant's perceptions and likelihood of use study oversampled young adults as a proxy for youth and found that intentions to use the proposed MRTPs among young adults who do not use tobacco were low and not impacted by exposure to the proposed claim. As noted in the social science review, the applicant's perceptions and likelihood of use study and the published literature suggest that the modified risk claims studied to date generally do not have a direct impact on the tobacco initiation intentions of youth and young adults who do not use tobacco (Chaffee et al., 2023; Chen-Sankey et al., 2023; El-Toukhy et al., 2018; Fix et al., 2017; Mays et al., 2016; McKelvey et al., 2020; O'Brien et al., 2022; Wackowski et al., 2020; Wagoner et al., 2022; Whaley et al., 2025; Yang et al., 2022). However, perceptions of the risk of tobacco products can influence future tobacco product use among youth (Buta et al., 2024; Li et al., 2023; Strong et al., 2019) and adults (Brose et al., 2015; Elton-Marshall et al., 2020; Li et al., 2023). Therefore, it is possible that exposing youth to the proposed claim could influence future behavior indirectly if the claim reduces perceived risk of the products. Given that youth are at increased risk, generally, for initiating tobacco use, it is critical that any marketing plans be designed to prevent youth exposure to marketing containing modified risk information, especially given the popularity of this brand of nicotine pouches among youth. Despite relatively low youth use of nicotine pouches, trends in youth use can shift quickly. Therefore, it is critical that FDA continue to monitor youth use of the proposed MRTPs and product category. If, once authorized, the marketing of the proposed MRTPs with the proposed claim leads to significant youth uptake, the benefits may no longer outweigh the risks, and any authorizations may be subject to withdrawal under section 911(j). Likewise, although the vast majority of adults who use nicotine pouches have prior tobacco experience, it is important to continue to monitor potential uptake of the proposed MRTPs among adults who do not use tobacco, particularly young adults.

3.4.3. Synthesis and Assessment of Relevant Statutory Standards

As TPL, I agree with the epidemiology, BCP, and social science review conclusions that these MRTPAs do contain sufficient information to evaluate the likely effect of the proposed MRTPs on the health of the population as a whole, taking into account both users of tobacco products and persons who do not currently use tobacco products.

The available nationally representative data from the 2022-2023 TUS-CPS suggests that, among adults, nicotine pouches are primarily used by people with a history of use of tobacco products other than nicotine pouches. In particular, the data suggest that nicotine pouches are used by people who currently use CCs, recently quit using CCs, or recently attempted to quit CCs. While the evidence from the 2022-2023 TUS-CPS is about nicotine pouches more broadly, the proposed MRTPs' position as the most popular nicotine pouch brand at the time of data collection would suggest that these findings on adult nicotine pouch use prevalence are relevant to the proposed MRTPs. As TPL, I find that that the available evidence supports that the

intended user population for the proposed MRTPs, adults who use tobacco products, is generally aligned with the people who actually use the products.

The 2022-2023 TUS-CPS data further suggest that dual use of nicotine pouches and other tobacco products, including CCs and smokeless tobacco products, is common. Whether these patterns of dual use persist long-term is unclear; however, the findings that nicotine pouches are more likely to be used by adults that recently quit smoking or attempted to quit smoking are suggestive that some adults are completely switching to nicotine pouches from CCs. The applicant's Patterns of Use study findings showed that approximately half of participants who dual used CCs and the proposed MRTPs completely switched to the proposed MRTPs by the end of the 10-week study period, as did nearly one quarter of participants who dual used the proposed MRTPs and any other tobacco products (e.g., CCs, moist snuff, snus, e-cigarettes, cigars, or cigarillos). Whether exclusive use of the proposed MRTPs among these participants persisted beyond the study period is unknown. While dual use is likely to be common, as TPL, I concur with the findings of the 2025 ZYN PMTA TPL review that the totality of the evidence on dual use suggests that a substantial portion of adults who dual use the proposed MRTPs and other tobacco products, including CCs, may eventually switch to exclusive use of the proposed MRTPs. I further find that, if the ZYN products are marketed as MRTPs, repeated exposure to the modified risk claim as part of the applicant's advertising would provide tobacco users with substantiated relative risk information and instructions for CC users to switch completely, thereby providing adult CC users with the information needed to make an informed choice to switch from dual use to exclusive use of the proposed MRTPs.

In the applicant's perceptions and likelihood of use study, viewing the stimuli with the proposed claim did not impact intentions to use the proposed MRTPs relative to viewing the stimuli without the claim among respondents using CCs or respondents using smokeless tobacco products. As TPL, I agree with the conclusions of the social science review that the high prevalence of current nicotine pouch use in these respondent groups (19.4% of respondents currently using CCs and 52.6% of respondents currently using smokeless tobacco) may have caused ceiling effects that may have contributed to an underestimation of any potential effects of the claim on behavioral intentions.

Regarding the impact to youth, current data suggest that the use of nicotine pouches among youth is relatively low at 0.9% of U.S. middle school students and 2.3% of high school students (Center for Rapid Surveillance of Tobacco et al., 2026; Park-Lee et al., 2026). Youth use of nicotine pouches has risen since 2022, the first year NYTS gathered data on nicotine pouch use, though use prevalence was stable from 2024 to 2025. The proposed MRTPs are the most popular brand of nicotine pouches among youth (Park-Lee et al., 2026). With respect to the potential impact of marketing with the proposed claim, the applicant's perceptions and likelihood of use study showed that among people who do not use tobacco products, including the oversample of young adults ages 21-24 who never regularly used tobacco, the proposed claim had no impact on intentions to use the proposed MRTPs. However, given the association between risk perceptions and tobacco product use initiation among youth noted in the social science review, exposure to modified risk claims in general may be a potential risk to youth. Accordingly, if authorized, marketing with the proposed claim must be targeted to maximize exposure to the intended user population, i.e., current adult tobacco consumers, and prevent exposure among unintended users, particularly youth, especially given the popularity of the applicant's brand among youth.

As TPL, I find that the totality of the current evidence on likelihood of use suggests that marketing the proposed MRTPs with the proposed claim will benefit the health of the population as a whole, taking into account both users of tobacco products and persons who do not currently use tobacco products.

3.5. MARKETING PLANS AND ACTIONS TAKEN TO MITIGATE RISK OF UNINTENDED USE

I consulted with the Office of Health Communication and Education (OHCE) to review the applicant's marketing materials and LLA. The OHCE consult indicates that the applicant's stated marketing plan generally describes a reasonable approach to marketing to its target audience of adult (ages 21+) tobacco product users and proposes measures to limit youth exposure to the proposed MRTPs' labeling, advertising, marketing, and promotion.

(b) (5)

(b) (4)

Given that youth are at increased risk for initiating tobacco use generally and there is uncertainty around the effect of modified risk information on youth use, it is critical that a marketing plan for all products that receive MRTP orders be designed to target tobacco users and prioritize preventing youth exposure. Consistent with OHCE's recommendations, as TPL, I recommend any MRGO letter for the proposed MRTPs include specific marketing restrictions and reporting requirements intended to help ensure that youth exposure to tobacco marketing is being minimized. OHCE also supported certain aspects of the applicant's marketing plans, such as the measures described in their MRTPAs and PMTAs intended to help address the potential for youth use of the products. As TPL, I agree with OHCE's recommendation that the applicant be encouraged to continue to implement these measures to help further mitigate risks to youth.

As TPL, I also agree with OHCE's recommendation that FDA strongly encourage the applicant to take additional steps to prevent initiation of the proposed MRTPs among youth and others who do not currently use tobacco products. For example, I recommend the applicant requires point-of-sale advertising to be placed only inside the store; placing displays near other age-restricted products and away from toys and candy; selects print publications that over-index for adults

ages 25+ and do not over-index for youth ages 12-17; avoids print advertising placements on the front or back covers; avoids the use of influencers, partners, bloggers and brand ambassadors to promote the products; limits sponsorships of athletic, musical, artistic, or other social or cultural events to events targeted to adults ages 21+; advertises rewards program offerings through an age-restricted website; and refrains from distributing branded merchandise or apparel and/or nontobacco item giveaways, given the known association between exposure to marketing and tobacco product use. Finally, I also note the applicant's intention to use (b) (4) and (b) (4) and agree with OHCE's recommendation that FDA remind the applicant that any statements indicating that these products are intended to be used for the treatment or mitigation of tobacco dependence, including as smoking or tobacco cessation aids, would render the products to be not modified risk tobacco products under section 911 and would subject the products to other requirements under the FD&C Act.

In addition, given the potential youth appeal of these products, I recommend that the applicant's PMSS include a requirement to closely monitor youth use of ZYN to ensure that marketing of the products as MRTPs will not have the unintended consequence of leading to increased use of these products among youth. Although adopting the measures above is not in itself a guarantee that the products, as actually used by consumers, will benefit the health of the population as a whole, as TPL, I recommend them as an important step in helping to ensure that they continue to meet all statutory requirements. To the extent that the marketing of these products as MRTPs leads to increased youth use, FDA may conclude that the benefits no longer outweigh the risks and any authorizations may be subject to withdrawal under section 911(j).

The social science review of the LLA did not identify any additional modified risk claims, neither implied claims nor express claims, beyond the proposed modified risk claim.

The Office of Compliance and Enforcement Division of Promotion, Advertising, and Labeling (DPAL) reviewed the marketing materials and LLA, and concluded that the current labeling and advertising in use for these products in the MRTPA do not appear to be false or misleading, or outside of the scope of the MGO granted on January 16, 2025. However, the DPAL review identified two items of note. First, the labeling and advertising in the firm's TPMF files cross-referenced in the MRTP application and certain material files in its most recent submissions under section 905(i) do not clearly reflect the firm's previous representations to FDA in its submissions in the ZYN PMTAs (authorized in 2025) (b) (4) (b) (4) for the above-listed products. While it does not appear that the applicant is currently marketing these ZYN products with the descriptor (b) (4) the DPAL review recommends the TPMF files and submissions under section 905(i) should be updated by the applicant to reflect its previous representations to FDA about (b) (4) Second, new product packaging was proposed in files submitted in the MRTP application that do not appear to bear the required nicotine warning statement: (b) (4) If authorized, the applicant should be reminded of its responsibility to ensure that the products comply with the MGO (January 16, 2025), the FD&C Act, FDA's implementing regulations, and all other applicable laws and regulations, including the warning requirements under 21 CFR 1143.3 that require, among other things, that the nicotine warning statement appear on all package labels.

3.6. POSTMARKET SURVEILLANCE AND STUDIES (PMSS)

Per section 911(i)(1) of the FD&C Act, FDA shall require that the applicant conduct PMSS for such tobacco products to determine the impact of the order issuance on consumer perception, behavior, and health, to enable FDA to review the accuracy of the determinations upon which the order was based, and to provide information that FDA determines is otherwise necessary regarding the use or health risks involving the tobacco product.

It is important for PMSS to continue to monitor use behaviors and consumer understanding among adults who smoke CCs to continue to assess population health. A key to the population health benefit of these MRTPs is that adults who smoke CCs will not only use the products, but that they switch to exclusive use of them and cease smoking. Therefore, as TPL, I recommend the PMSS requirements include monitoring the use of the MRTPs among adults who smoke CCs in terms of initiation, dual use, and complete switching. To adequately assess these impacts, I recommend that applicant conduct PMSS that include assessing behavior and consumer understanding among people who use the MRTPs at multiple time points. Given that CC use prevalence has been slower to decline among older adults compared to adults of other ages (Stone et al., 2025), I recommend that findings regarding use behavior be reported both overall and stratified by age categories to provide additional information about potential population health benefits.

Longitudinal cohort study designs are the most likely to produce robust and reliable evidence to demonstrate the impact of the MRTPs in terms of uptake, dual use, and complete switching. A repeated cross-sectional study that collects valid information on recalled history of tobacco use may also provide evidence across multiple time points to determine whether people who use the MRTPs used them to completely switch from cigarette smoking. Such studies should use representative samples of sufficient size to produce reliable estimates of product use behaviors, as well as provide adequate statistical power to enable the applicant to conduct statistical testing of the main outcomes of interest. If conducting a longitudinal study, as TPL, I recommend that the study include measures that can be used to account for and assess the impact of participants who are lost to follow-up. As TPL, I also recommend such studies include an assessment of consumers' exposure to and understanding of the claim. In particular, PMSS must assess the extent to which users of these products understand that, to reduce their risk of disease relative to smoking CCs as described in the modified risk information, they must use the proposed MRTPs exclusively.

To ensure a MRGO provides a population health benefit, it is likewise essential for PMSS to monitor the impacts of the order on the tobacco use behaviors among people who do not use tobacco, especially among youth under age 18 and among young adults below the minimum age of sale (i.e., ages 18-20). It is well documented that exposure to marketing impacts youth initiation of tobacco products. As described above and in the OHCE consult, the applicant is currently marketing these ZYN products using several marketing tactics known to be appealing to youth and young adults, such as (b) (4) Even though the current evidence shows the relatively low risk of youth initiation of nicotine pouch use, this could change over time. For this reason, it is critical that a marketing plan for any products that receive MRTP orders be designed to target adults above the minimum age of sale who use tobacco and prioritize preventing youth exposure. The order

letter appendices outline digital marketing restrictions and tracking requirements to ensure that marketing is appropriately targeted to adults who use tobacco products. An assessment of the marketing plan and the applicant's adherence to it, along with metrics to ensure that youth exposure to tobacco marketing is being minimized, are important elements for assessing the degree to which the marketing of the proposed MRTPs continues to benefit the population as a whole taking into account both users of tobacco products and persons who do not currently use tobacco products.

Given the above evidence, the growing popularity of nicotine pouch products, and uncertainty related to the impact of modified risk information on youth, the applicant must also monitor and report on youth and young adult use of ZYN products to help ensure that marketing of the proposed MRTPs does not have unintended consequences for youth and young adult use of the products. I also recommend that PMSS requirements include regular, detailed reporting from the applicant on the findings of any other consumer surveys or data gathering, including from members of any rewards programs, such as ZYN Rewards and Club 3|6. This reporting should include all findings related to member demographics, including age; past, current, and future tobacco use behavior; exposure to marketing with the proposed claim, perceptions of the risks associated with using the proposed MRTPs, and consumer understanding of the proposed claim.

Additional PMSS requirements are described in the order letter appendices.

3.7. ENVIRONMENTAL CONCLUSION

A finding of no significant impact (FONSI) was signed by Hans Rosenfeldt on June 29, 2026. The FONSI was supported by an Environmental Assessment (EA) prepared by FDA on June 29, 2026.

4. CONCLUSION AND RECOMMENDATION

The applicant requested authorization under section 911(g)(1) of the FD&C Act to market the products specified in Appendix A with the following risk modification claim:

- Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis

4.1. STATUTORY REQUIREMENTS FOR AUTHORIZATION

For FDA to issue a risk modification order under section 911(g)(1) of the FD&C Act, the applicant must demonstrate that the proposed modified risk tobacco product, as it is actually used by consumers, will:

- Significantly reduce harm and the risk of tobacco-related disease to individual tobacco users; and
- Benefit the health of the population as a whole taking into account both users of tobacco products and persons who do not currently use tobacco products.

In accordance with section 911(g)(4) of the FD&C Act, in evaluating the benefit to health of individuals and of the population as a whole under section 911(g)(1), FDA must take into account:

- The relative health risks to individuals of the proposed modified risk tobacco products that are the subject of these applications;

- The increased or decreased likelihood that existing tobacco product users who would otherwise stop using such products will switch to using the proposed modified risk tobacco products that are the subject of these applications;
- The increased or decreased likelihood that persons who do not use tobacco products will start using the proposed modified risk tobacco products that are the subject of these applications;
- The risks and benefits to persons from the use of the proposed modified risk tobacco products that are the subject of these applications compared to the use of smoking cessation drug or device products approved by FDA to treat nicotine dependence; and
- Comments, data, and information submitted to FDA by interested persons.

Under section 911(h)(1) of the FD&C Act, FDA also shall ensure that the advertising or labeling concerning the MRTP enable the public to comprehend the information concerning modified risk and to understand the relative significance of such information in the context of total health and in relation to all the diseases and health conditions associated with the use of tobacco products.

4.2. CONCLUSIONS: SCIENTIFIC EVIDENCE

My review of the scientific evidence integrated various lines of evidence regarding the proposed MRTPs and their potential effects on health and tobacco use behavior. As applicable, this assessment also reflects the determinations described in the 2025 ZYN PMTA TPL review supporting the marketing authorization of these new products. I undertook this assessment to determine whether the MRTPAs met the statutory requirements listed above. After conducting a thorough scientific review of the information contained in the MRTPAs; the recommendations from TPSAC; relevant comments, data, and information submitted to FDA by interested persons; and other scientific information identified by the Agency from other sources, I conclude that:

> The applicant has demonstrated that, as actually used by consumers, the 20 proposed MRTPs sold or distributed with the proposed modified risk information will significantly reduce harm and the risk of tobacco-related disease to individual tobacco users and benefit the health of the population as a whole, taking into account both users of tobacco products and persons who do not currently use tobacco products.

First, the claim “Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis" is scientifically accurate. As described in the 2025 ZYN PMTA TPL review, 36 of the 42 HPHCs reported for the proposed MRTPs are below the limit of quantification, and the methods used to measure HPHCs were validated and determined to be fit-for-purpose. The epidemiology review concluded that the applicant’s new biomarker study (SM22-03) demonstrated that Swedish Match-brand nicotine pouch users had biomarker profiles that were similar to non-users and consistently lower than those observed in CC smokers. The long-term epidemiological evidence reviewed under the cross-referenced General Snus MRTPA submissions (authorized in 2019) and bridged to the proposed MRTPs substantiates that relative to cigarette smoking, exclusive use of the 20 proposed MRTPs poses lower risk of the health outcomes in the proposed claim. Accordingly, as TPL, I find that the available scientific evidence demonstrates that exclusive use of the 20

proposed MRTPs will significantly reduce harm and the risk of tobacco-related disease to people who use tobacco.

Second, the available scientific evidence supports that, as actually used by consumers, the 20 proposed MRTPs will benefit the health of the population as a whole. The available data suggest that use among youth is currently relatively low. In particular, national studies (i.e., NYTS, MTF) currently show a relatively low nicotine pouch use prevalence among youth overall. Estimates of switching observed in the applicant's Patterns of Use Study suggest that some adults who smoked CCs and used ZYN at baseline did stop smoking CCs. As TPL, I considered these findings regarding potential benefit alongside potential risks, particularly the likelihood that people who do not use tobacco products, including youth, could start using proposed MRTPs. The available evidence suggests that complete switching to the proposed MRTPs and away from CCs by adults can provide a benefit to population health.

Third, the evidence from the perceptions and likelihood of use study shows that consumers understand that ZYN poses lower risks of the health conditions specified in the modified risk claim than smoking CCs, while also understanding that the products still pose health risks. Importantly, the evidence from the PBI study included in the General Snus MRTPAs (authorized in 2019) also shows that consumers understand that the language "instead of" in the proposed claim means one must use the product exclusively to reduce one's risk of the health conditions specified in the proposed modified risk claim.

The available scientific evidence demonstrates that, as actually used by consumers, the 20 proposed MRTPs will benefit the health of the population as a whole taking into account both users of tobacco products and persons who do not currently use tobacco products. Thus, the products sold or distributed with the modified risk information meet the standards under section 911(g)(1) of the FD&C Act.

4.3. RECOMMENDATION FOR THE MODIFIED RISK ORDER REQUEST

As TPL, I reviewed the scientific evidence regarding the MRTPs and their potential effects on health and tobacco use behavior. I undertook this assessment to determine whether the MRTPAs met the statutory requirements listed above. After conducting a thorough scientific review of the information contained in the MRTPAs, the recommendations from the Tobacco Products Scientific Advisory Committee, relevant comments, data, and information submitted to FDA by interested persons, and other scientific information identified by the Agency from other sources, I conclude that with respect to the risk modification order request, the applicant has demonstrated that the products proposed to be sold or distributed with the proposed modified risk information meet the standard under Section 911(g)(1) of the FD&C Act, including that the issuance of an MRGO is expected to benefit the health of the population as a whole, taking into account both users of tobacco products and persons who do not currently use tobacco products.

Section 911(h)(4) of the FD&C Act requires an MRTP order to be for a specified period of time. Taking into account individual health risks, patterns of youth use over time, and robustness of behavioral evidence supporting adult benefit, I recommend authorization for a period of five years. Although this review has found that a risk modification order for these products will benefit the health of the population as a whole, that determination may change over time as a function of how the products are actually used by consumers. Therefore,

monitoring use of the proposed MRTPs in terms of initiation, dual use, and complete switching is required under section 911(i)(1) during the authorization period. PMSS must also include an assessment of MRTP users' behavior and understanding of the modified risk information. Postmarket surveillance must also include metrics to ensure that youth exposure to tobacco marketing is being minimized as per the requirements of the order, as well as to monitor the impact of the proposed MRTPs on tobacco use among people under the minimum age of sale. A five-year period provides sufficient time for trends in use behavior to emerge and be evaluated through PMSS, informing a determination of whether the section 911(g)(1) standard continues to be met and whether the order should be renewed.

FDA has examined the environmental effects of marketing the proposed MRTPs with the proposed modified risk claim and made a Finding of No Significant Impact (FONSI).

MRGOs should be issued for the products identified on the cover page of this review. I recommend that the language in **Appendix C** of the order letter be included in the authorization for PMSS and postmarket reporting.

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6. APPENDICES

Appendix A. Modified risk tobacco products subject of this review

Common Attributes[1,2,3,4]	
Submit date	April 5, 2024
Receipt date	April 5, 2024
Applicant	Swedish Match USA, Inc.
Product manufacturer	Swedish Match North America LLC, Swedish Match North Europe AB
Application type	Standard
Product category	Other[5]
Product subcategory	Other[6]
Product order under 911(g)	911(g)(1) Risk Modification Order
Modified Risk Claim	Using ZYN instead of cigarettes puts you at a lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.
Attributes	**Tobacco Product**
STN	**MR0000268.PD1**
Product name	ZYN Cool Mint 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 grams (g)
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Cool Mint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 milligrams (mg)/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 millimeters (mm) Portion Width: 14 mm Portion Thickness: 4.5 mm

[1] We interpret package type to mean container closure system and product quantity to mean product quantity within the container closure system, unless otherwise identified.
[2] Product name is brand/sub-brand or other commercial name used in commercial distribution. Might also be identified by alternative names.
[3] Effective April 14, 2022, FDA's authority to regulate tobacco products was extended to include tobacco products containing nicotine from any source. Therefore, nicotine source should be included in future submissions.
[4] Attributes in Appendix A may display converted values.
[5] Oral pouch products containing nicotine derived from tobacco.
[6] The applicant uses the term "flavors" or "varieties" to indicate product flavors.

STN	MR0000268.PD2
Product name	ZYN Cool Mint 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Cool Mint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD3**
Product name	ZYN Peppermint 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Peppermint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD4**
Product name	ZYN Peppermint 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Peppermint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

STN	MR0000268.PD5
Product name	ZYN Spearmint 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Spearmint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD6**
Product name	ZYN Spearmint 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Spearmint
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD7**
Product name	ZYN Wintergreen 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Wintergreen
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

STN	MR0000268.PD8
Product name	ZYN Wintergreen 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Wintergreen
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD9**
Product name	ZYN Citrus 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Citrus
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD10**
Product name	ZYN Citrus 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Citrus
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

STN	MR0000268.PD11
Product name	ZYN Coffee 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Coffee
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD12**
Product name	ZYN Coffee 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Coffee
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD13**
Product name	ZYN Cinnamon 3 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Cinnamon
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

STN	MR0000268.PD14
Product name	ZYN Cinnamon 6 mg
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Cinnamon
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD15**
Product name	ZYN Smooth 3 mg[7]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Smooth
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD16**
Product name	ZYN Smooth 6 mg[8]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Smooth
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

[7] Swedish Match might also market this product as ZYN Original 3 mg.
[8] Swedish Match might also market this product as ZYN Original 6 mg.

STN	MR0000268.PD17
Product name	ZYN Chill 3 mg[9]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Chill
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD18**
Product name	ZYN Chill 6 mg[10]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Flavored
Flavored CF, as identified	Chill
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm
STN	**MR0000268.PD19**
Product name	ZYN Menthol 3 mg[11]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Menthol
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 3 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

[9] Swedish Match might also market this product as ZYN Classic 3 mg.
[10] Swedish Match might also market this product as ZYN Classic 6 mg.
[11] Swedish Match might also market this product as ZYN Fresh 3 mg.

STN	MR0000268.PD20
Product name	ZYN Menthol 6 mg[12]
Package type	Polypropylene Can and Polypropylene Lid
Product quantity	6 g
Characterizing flavor (CF)	Menthol
Nicotine source	Tobacco
Additional properties	Nicotine Concentration: 6 mg/pouch Portion Count: 15 pouches Portion Mass: 0.40 g Portion Length: 28 mm Portion Width: 14 mm Portion Thickness: 4.5 mm

[12] Swedish Match might also market this product as ZYN Fresh 6 mg.

Appendix B. Amendments and additional submissions received

Amendment Received for These Applications

Submit Date	Receipt Date	Applications Being Amended	Reviewed	Brief Description
August 16, 2024	August 16, 2024	All	Yes	Inform FDA that additional study added to (b) (4)

Additional Submission Received for This Applicant

Submit Date	Receipt Date	Reviewed	Brief Description
February 24, 2025	February 24, 2025	Yes	Change in authorized points of contact